PATTERNS AND DIFFERENCES IN ALCOHOL DRINKING AMONG THE THREE MAIN RELIGIOUS GROUPS IN INDIA: HINDUS, MUSLIMS AND SIKHS

This is a thesis submitted in accordance with the requirements of the University of Liverpool for the degree of Doctor in Medicine in the Faculty of Medicine (Division of Psychiatry)

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Dr Samir Kumar Ghosh

Declaration I

I declare that, except as indicated in the thesis, this work has been carried out and the thesis has been written by myself.

Samir Kumar Ghosh

Declaration II

No portion of the work referred to in this thesis has been submitted in support of an application for another degree or qualification of Liverpool or any university or other institution of learning.

Samir Kumar Ghosh

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ABSTRACT

For a period of three years a community survey of alcohol drinking was carried out by the author in the West Bengal State of India to inquire into the different drinking patterns of three main religious groups of people in India: The Hindus, Muslims and Sikhs.

The survey sample was drawn from the population of the city of Greater Kolkata, West Bengal and altogether 650 respondents were interviewed, of which 622 belonged to the three religious groups.

The sample was selected at random from the population of adults over 18 years of age, and of either sex. The subjects were interviewed by the author using a disguised and structured questionnaire, mostly in their homes, after obtaining their consent.

The questionnaire was in three parts. The first part had questions on demographic details, occupation, living style etc. also including religious practice. The questions in the second part covered family health etc., drinking and attitude towards drinking alcohol. The third part included questions, embedded among questions on health etc, on drinking alcohol by the subjects, places and types of drinking and Brief Michigan Alcoholism Screening Test (B.M.A.S.T.) questions. The categories of drinkers were occasional, light, moderate and heavy, also alcohol dependents (alcoholics). Questions were asked about taking addictive drugs. Alcohol related questions were embedded amongst questions on health and leisure pursuits.

Statistical analysis of the findings revealed many interesting and significant differences in drinking patterns between the three religious groups: Hindus, Muslims and Sikhs.

The Muslims were found to be drinking less than the Hindus and Sikhs. Male drinkers were found to be more than female in all three religious groups. Among the Sikh religious group both males and females drank consistently. No female drinker

was found in the Hindu group of subjects. The mean age of initiating alcohol drinking was found to be higher in this study compared with other known studies in other regions of India. The age of starting drinking alcohol was found to be higher compared to several other studies in other parts of India. Many subjects started drinking earlier in their lives but did not continue. BMAST screening tool detected less than 1% of "alcoholics" in this study which is considerably less than other published studies in India.

Hindus are found to be drinking more in the religious and other ceremonies than in their homes. Muslim and Sikh subjects denied drinking in any religious ceremonies Country liquors and illicit liquors were found to be used by the lower socio-economic classes of people sustaining many serious and often irreversible, health problems.

Many significant differences were also found between the three religious groups regarding the types, places and styles of drinking alcohol, also between their habits of taking addictive drugs.

Social drinking, as known in the Western countries, was not found to exist and most alcohol drinkers consumed alcoholic beverages with a desire to get drunk and stay drunk as long as possible.

Interesting differences were found among the family drinkers among the three religious groups.

The subjects belonging to the higher and lower socio-economic class groups were found to be dinking more alcohol than the middle class groups in all three religions.

"Alcoholism" as detected by BMAST screening tool was found to be less in the West Bengal State of India compared to many other States, as shown in the thesis reviewing available published studies. Among the three religious groups more Muslim subjects were found to be "alcoholics". No female subject was found to be detected as "alcoholic".

However, only two previous known published epidemiological studies, one on mental health, including alcohol drinking, and the other was on alcohol drinking in lower socio-economic groups, found in the West Bengal State of India.

In conclusion, the author commented that to date there is no known study comparing pattern and pathologies of alcohol use of the three main religious groups in India. Alcohol production and drinking in India is on the rise steadily and findings of this study will encourage researchers to replicate studies on drinking and also harmful use of alcohol in the West Bengal State as well as nationwide and in all other States of India.

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CHAPTER 1
INTRODUCTION AND BACKGROUND

Alcohol is known to have been consumed throughout human civilisation, or at least for the several thousands of years for which accurate records exist. It is easily produced by fermentation and has played a part in the development of human civilisation in many ways: as medicine; as a substance endowed with religious significance; as food and an important element in numerous cuisines; as fuel; as a disinheriting/intoxicating drug used to aid social interaction.

Considerable anthropological data now exists to support the observation that alcoholic beverages exist in almost all societies. Many societies, both past and present, have devoted time and resources to the production of alcohol for consumption (1, 2, 3). In many others, new forms of alcoholic beverages have been introduced, accepted and then integrated into an existing context and pattern of use of alcoholic beverages or other mood-altering substances (4, 5). A few ancient cultures had no alcoholic beverages at all, but were eventually introduced to them through contact with other groups.

Different subcultures, peoples, and groups within nations and cultures have different forms of alcohol production, distribution and consumption, or patterns of drinking. These are as important areas of study as volume and quantity of consumption.

With the current emphasis on effects of alcohol use on health and social relations, much contemporary research is being focused onto issues relating to quantity (dose) of alcohol consumed by individuals, and the impact this has on well-being. This emphasis had been enhanced by public health concerns and advances in medical and pharmacological sciences, with much attention being directed at factors such as the level of alcohol content in alcoholic beverages, dose measurement, and national consumption levels/patterns.

Certain characteristics relating to the influence of alcohol and outcome are now well recognised. These have prevailed in earlier human groups and societies as well as in contemporary ones. Indeed, these known aspects of alcohol have been, and remain, reasons why alcohol is consumed. Alcohol is known to belong to a class of substances that alter mood and behaviour. Some cultures perceive in alcohol a

"spirit" that possesses those who consume it; in others, alcohol is a devil that overcomes consumers (6). Alcohol is generally viewed and accepted by many as important to social interaction, social integration, and even the bonding of groups in certain circumstances - and it remains an important part of some religious practices (7).

Religion and caste forms an important aspect of identity of most Indians, though the caste system at present is no longer widespread. More than 80% of the Indian population is composed of Hindus. The 12% of the population that is Muslim is only outnumbered by those in Indonesia, Pakistan and Bangladesh. Christians, Sikhs, *Buddhists* and *Jains* make up about 5.6% of the total population. The Hindus still follow a hierarchical caste system, which is thousands of years old, and discussed elsewhere in this thesis, and it consists of thousands of castes and sub-castes. The four large caste clusters called "*varnas*" (Sanskrit word for colour), each of which has a traditional social function, are (in order of descending hierarchy, mainly based on purity and prestige):

1. Brahmin – mostly priests.
2. Kahatriyas – mostly warriors.
3. Vaishyas – peasants and traders.
4. Shudras – servants.

These caste system divisions have not been used in this survey because of the sensitivity expressed by the subjects, and because the system has not been legally accepted.

Outside the caste system is a fifth group that formerly used to be referred to as the "*untouchables*" but are now called "*Harijans*" (Sanskrit word meaning people of God, a name given by Mahatma Gandhi) - they belong to what are officially designated by the Indian government as "*schedule castes*". The schedule castes account for nearly one sixth of India's total population. In addition, there are numerous tribal peoples, especially in the north-eastern parts of the country.

The people of India have 18 major languages that are officially recognised, as well as hundreds of dialects, reflecting the country's enormous cultural diversity. Most Indian languages are derived from Sanskrit, the language of ancient India.

India is a multiparty, secular, federal, democratic republic, and has 25 States, organised into a number of large districts for administrative purposes. The State governments have the sole power to legislate in a variety of domains, including taxation on alcoholic beverages.

India has traditionally been considered a "dry" or abstinent culture. Thus, it is important to examine religious and cultural traditions and how they influence the drinking patterns and practices in the Indian society. Lal and Singh (8) reviewed a variety of sources including religious texts, historical accounts and other manuscripts, and commented extensively on the attitudes and behaviours related to drinking alcohol in India. They failed to identify any cultural tradition in India that could be described as being clearly and unequivocally against the use of alcohol in any form and under all circumstances.

For disinhibiting and intoxicating purposes, alcohol has been most widely used in the modern world. With the main exception of Muslim societies, it has been generally viewed as a legal, socially acceptable psychotropic drug for adult use as a self purchased and self-administered substance taken by healthy individuals primarily for its mind affecting properties.

All cultures have a set of ideal attitudes regarding the consumption of alcohol and for abstention from it, and which define expected and prohibited behaviours while drinking. Pittman (9) outlined the basis for the study of attitudes toward alcohol consumption, setting out four cultural settings: abstinent, ambivalent, permissive and overly permissive.

Alcoholic beverages have been documented in ancient Indian literature (9, 10), and have also been used in many medicinal preparations in traditional Indian medicine. But, in spite of alcoholic beverages being known and also available in different forms, they never became a part of staple food in India. There have also been strict guidelines and rules on who is allowed to drink alcohol and under what circumstances. "*Manu*" (ancient Indian literature), for example, strictly forbade the drinking of alcohol by the Brahmins (upper caste Indians), whereas other classes of society and lower castes were allowed to drink, but only on specific occasions such as wars, religious events and festivals. Abstinence had always been considered the norm for the common man (11). Historical evidence suggests that alcohol did not

pose a significant health and social problem during the ancient and medieval periods in India's history (12).

India has experienced a slow and steady rise in illicit alcohol availability and consumption. There has also been a steady change in the type of alcohol consumed, in the patterns of alcohol drinking, and in the general attitude of society towards drinking alcohol. This has continued even after the independence of India from British rule in 1947, though it has varied from State to State. In the North Western part of India, alcohol use seems to be more accepted than in the Eastern part (12).

The use of plant products such as cannabis and opium were originally more common in undeveloped rural areas of India, but these practices have gradually been replaced by increased alcohol consumption as agricultural advances have taken place. Home brewed alcohol still remains as a cottage industry, but distilled beverages (which have a known concentration of alcohol) have gradually replaced traditional beverages, especially in the urban and in some rural areas. Better fermentation and distillation processes coupled with better packaging technology have resulted in alcoholic beverages becoming a mass-produced commercial item, and improved communication and transport facilities have contributed towards easy availability (12).

Religious and cultural differences in alcohol drinking throughout the world are well documented. In earlier studies by the author (13, 14, 15, 16), significant differences in alcohol drinking and alcohol dependence were shown between the different religious groups of the Asian population in the United Kingdom. Following those studies, the author conducted another study (unpublished) in India examining the drinking patterns of different religious groups in India in 1987. The study by Cochrane (17) in U.K. also showed differences in the patterns of drinking between the Hindu, Muslim and Sikh religious groups.

BACKGROUND

An historical overview of main Indian religious culture and its evolution within India culminates in a detailed exploration of the relationship between alcohol consumption and differing religions, especially Hindus, Sikhs and Muslims which are the three

main religious groups to provide the background against which this study is undertaken.

INDIAN RELIGIONS

Of all the religions in the world, those of India may be the most complex, the most fascinating and the most difficult to describe (18). Hinduism, Islam and Sikhism have the largest numbers of followers, and these three religions are mainly discussed in this chapter in line with my study.

HINDUISM

The religion practiced by most Indians today is generally called Hinduism. Both the words Hindu and India are derived from the Sanskrit (the ancient Indian liturgical language), a word applied especially to the Indus river in north western India, the region best known to the Persians and Greeks of ancient times (19, 20). But, within the general term Hinduism, Brahmanism must be distinguished as an ancient and priestly form of religion (21, 22, 23).

India has a vast population, at present estimated at more than one billion in total, of which 81.3% are described as Hindus. There are also important minority sects, such as Jains and Sikhs, to which reference will be made later. The great religion of Buddhism also arose in India and cannot be understood without the background of Indian thought, although Buddhism has now spread elsewhere and has almost entirely disappeared in the land of its origin (24, 25).

A large and diverse scripture, oral and written, is found throughout Indian history from about 1000 B.C. onwards. The oldest religious books, the "*Vedas*", are not, as is sometimes said, the most ancient religious documents in the world, although they contain traditions that were passed on orally for centuries before being written down (26, 27, 28).

Vedas

There are four Vedas (29, 30, 31, 32):

The "*Sam Veda*" is a valuable source of information for the study of the history of Indian music - it contains 1810 hymns to be sung by a special class of priests at the *soma* sacrifice.

The "*Yajur Veda*" contains 1549 hymns to be sung at the time of sacrifice.

The "*Atharva Veda*" contains 731 hymns to be sung to ward off spells and charms.

About two centuries ago, European scholars studying the Sanskrit language noticed the remarkable similarities that exist between Sanskrit, Latin and Greek. They agreed that these languages must have had a common origin, and that the peoples who spoke the original tongues had been dispersed eastward to India and westwards to Europe. Before long the name Indo-European was coined to express the related tongues and peoples (33, 34, 35, 36).

The Indo-Europeans are believed to have come from regions somewhere near the Caspian Sea. About 2000 B.C. there seems to have been related tribes from South Russia to Turkestan who had similar cultures and who spoke dialects of the Indo-European type. They began to disperse about the beginning of the sixteenth century B.C., and invaded Mesopotamia, for example. In the remains of the ancient Hittite Kingdom in Asia Minor, clay tablets have recently been discovered which refer to the gods "*Mitra*", "*Varuna*" and "*Indra*" who feature in the later Vedas in India (37, 38, 39, 40).

The castes into which Hindu society came to be divided were partly based on this racial distinction of light from dark skins. The castes were thus social rather than religious (41, 42). Today, however, after all these centuries, the colour of the skin is no indication of caste.

The above introduction was necessary to provide the setting for the first literary records in the "*Vedas*" (43, 44). The religion of these books is sometimes called "*Vedism*", or "*Brahmanism*", as being in the hands of a priestly class who served a military aristocracy. The masses of the people may already have followed a religion like that of later Hinduism (45, 46, 47, 48).

The word *Veda* is a Sanskrit noun, which means knowledge. It denotes knowledge or wisdom that is passed down in the collection of sacred books. Of the four Veda books, the last three contain liturgies, prayers and formulas for incantation (49, 50).

The oldest and most important is the "*Rig-Veda*" or "*Song Veda*". It is arranged in ten sub-divisions or circles (49, 50). The "*Rig-Veda*" may have been completed by 800 B.C. as it has a close resemblance to the sacred "*Gatha* books of *Zoroastrianism*" in Persia which appeared somewhat later. The power of the sacred alcohol (*Soma*) is ascribed to a divine agency, and the drink gradually became personified as a God (51, 52, 53). A power akin to the "*Soma*" is "*Agni*", the God of fire (Old Latin *ignis*). "*Agni*" is a natural force bringing light and warmth to men, but terrible in destruction: "*Fire-jawed, wind-driven, there blazes down upon the wood Agni, like a strong bull that rushes on the herd*".

Most of the Gods of the "*Vedas*" disappeared in later times, and its apparently carefree polytheism gave way to asceticism and pessimism (53). As Fausboli commented, the seeds of some of the later priestly beliefs and claims are in the Vedas: "*We drank Soma, we became immortal, we found the gods*" (54, 55).

Some of the Vedic prayers are still used daily in India. Every morning devout Hindus repeat this verse of the "*Rig-Veda*" in their prayers and as grace at meals (56, 57, 58).

The Upanishads

In time, each of the four Vedas had a body of commentaries attached to it, which contained directions for the performance of the sacrificial ritual (41).

The *Brahmins* regarded themselves as supermen, human gods, because by performing their rites they made the very sun to rise. They claimed the monopoly of religion, excluding some castes from its observance. But not all Brahmins are now priests; the majority follow other vocations. And, on the other hand, many priests of Indian temples are not Brahmins, the temple worship now being different from the elaborate ceremonial with which the Brahmin should be occupied (59, 60, 61, 62, 63).

Attached to and later than the Brahmins are the famous *Upanishads*. The Sanskrit word *Upanishad* seems originally to have meant "*session*", as of pupils sitting round a teacher. The *Upanishads* later came to be called *Vedanta*, the end of the *Vedas*. Long after writing had come into use, the *Vedas*, *Brahmins* and *Upanishads* were

only handed down orally (64). As sacred matters they must not be published or uttered before members of lower castes. By great feats of memory they were retained until they were eventually written down at some time in the Christian era (65, 66, 67).

Whereas the *Vedas* are chiefly hymns and the *Brahmans* are concerned with ritual, the *Upanishads* are theological and philosophical treatises (68). The age of the *Upanishads* is uncertain, but probably most of them date from a time after 800 B.C. There have been more than three hundred *Upanishads*, but the most important of the really old ones that survive number only thirteen (69, 70).

A further doctrine of the *Upanishads* is the reincarnation of souls. This doctrine of rebirth is strange to modern Europe, but it was taught by Plato and is well known in Africa. Even this has difficulty in fitting into *Brahmanic* ideas, for they taught (as already described) of salvation gained by merging into the identity of the universal soul. Rebirth introduces moral ideas; by good action one gets free from this world and its trials (70).

The Sanskrit word "*samsara*" is used to express the idea of "*migration*", the rebirth of the soul in an endless series of bodies. One's lot in the next life is determined by the consequences of deeds done in this life, by one's "*karma*" (deed: own work). This became particularly a Buddhist doctrine, but it is also taught in the Upanishads that those who do good in this life will obtain a better rebirth and those who do wickedly get a worse rebirth (71, 72, 73).

Indian religious history has sometimes been divided into an older period of *Brahmanism*, and a later period of *Hinduism* proper, with its many sects. In another way, the division has been made between Aryan and non-Aryan: *Dasa* or *Dravidian* (74, 75). But these divisions assume both that *Hinduism* itself is not very old, and also that *Vedism* did not influence the later religion (76, 77). This is not so. *Hinduism* is the expression of an ancient and living great civilization, and the famous "*Bhagabatgita*" develops *Brahmin* thought (78, 79). What is evident in later *Hinduism* is an opposite movement from the impersonal teaching of the *Upanishads*, with a stress on belief in a personal God (76).

This theistic *Hinduism* is expressed first in two great epic poems, the *Ramayana* and the *Mahabharata* (27, 28, 66). They were probably completed by the second century

A.D. but it is considered that their origin goes back to the pre-*Buddhist* period (80, 81).

The *Mahabharata* is much longer than the *Ramayana*, and has 90,000 couplets. The title means the "*great Bharata*" story, and it tells of the war between the house of *Bharata* and a neighbouring North Indian tribe (82, 83, 84).

The most important part of the *Mahabharata* is an inserted section in the sixth book. This is the "*Bhagavad-Gita*", the Song of the Lord, or Song of the Blessed One (85). The *"Geeta"* (as this title is abridged) has often been called the most important single work ever produced in India, the "*New Testament of India*"/ "*Gospel of Krishna*". It is read and loved as no other book in India today (86).

The "*Geeta"* combines both the *Brahmanic* (spiritual) non-ethical teaching, and a moral teaching of kindness and compassion. It is thought that the *Geeta* was originally a verse "*Upanishad*", which was later modified to become the charter of the personal religion of God *Krishna* (87).

The loving devotion to a personal God is called "*Bhakti*", and this has been a persistent feature of *Hinduism* during most of the last two millennia. It is especially connected with the worship of *Vishnu* and his avatars, and with "*Siva"* (88).

The "*Bhakt"* movement expressed the feelings of the common people and led to the creation of fine vernacular devotional literature (89). Both ordinary men and scholars have acknowledged its appeal. Still today, many of the recent leaders of Hindu thought have used the "*Bhakti"* hymns in their religious activities (90).

Congregational worship of the Christian and Muslim kind is foreign to Hinduism, except for the hymn singing of "*Bhakti"* or modern groups, and the great occasional festivals of the temples. Domestic worship in Hindu houses may take place in a prayer room which may contain images or symbols of Gods. The image may be in human form, and washed, dressed, and fed as in ancient Egypt. Or it may be a simple stone, the lingam in the worship of God *Siva*. Flowers are frequently offered, and lamps lit, and sacred sentences ("*mantras")* recited (91, 92, 93).

A devout Brahmin will spend a great deal of time in complicated ritual and in scripture reading and recitation (94). There are many other holy men, teachers (*gurus*), wandering ascetics ("*sadhus"*), down to the vulgar exorcists (95).

There are immense Hindu stone temples in India, especially in the south. Many of the existing temples date from recent centuries, and modern ones are still being built. Most people do not go to the temples often but will make gifts at local village shrines regularly or in time of need (96). There are numerous religious festivals, with processions in bright clothing, offerings at the shrines and general rejoicing (97).

In Hinduism there has always been respect for the powers of nature and life in all its forms. In a religion which has so long a history and embraces so many different cults, differences of worship must be expected (98). The worship of the female principle in nature is expressed in manuals of ritual and magic called "*Tantras*" (Sanskrit - *tantra*, thread, fundamental doctrine). In these manuals, and in paintings in some temples, representations of sexuality are said to symbolize the process by which the universe was born (99). Nature worship is found in many villages, most of whose inhabitants seem ignorant of the great Gods (100, 101).

Vows and pilgrimages are common in Hinduism, as in most other religions. Great crowds undertake the long and dusty journey to bathe in the sacred waters of the Ganges at Veneras (Varanasi, India), and at other places (102).

Apart from the conversion of some millions of Indians to Christianity, the impact of the West has caused a revival of Hinduism. In 1828 the "*Brahmo-Samaj*" (society of believers in one Deity) was founded, with the aim of providing common ground for believers in a single God. Much more influential was the "*Arya-Samaj*" in 1875, which not only sought to revive the ancient Vedic religion but also gave some recognition to caste, karma, and the Yoga philosophy. In addition, it established missionary colleges and orphanages. Today the "Arya-Samaj" is militant in reviving Hindu faith and combating other religions. It and the *Hindu Mahasabha* (more recent Hindu party) "*purify*" those brought back from other religions (103, 104).

Another religious revival, the *Ramakrishna Mission*, has not only sought to return to the *Vedanta* but also to spread this faith overseas. It is an educational and missionary body, which has branches in Europe and America. Some Europeans have sought to revive the *Vedanta* for the West, notably the Theosophical societies. Such people too often seem not to realize the full implications of the doctrines they so eagerly accept. Moreover they tend to react strongly against their own religious

heritage in a way that they would be classed as being reprobate if they were Hindus by birth (105, 106).

Mahatma Gandhi has undoubtedly been the most outstanding representative of modern India to the outside world. He freely acknowledged his debt to the West and to Christian teaching, especially the Sermon on the Mount.

The "*Bhakti*" tradition is continued most notably by the writings of Rabindranath Tagore (1861-1941). He interpreted the "*Brahmanic*" view of the universe as a "*play*", in a quite new and positive way. His devotional writings appeal to East and West (18).

ISLAM

Islam is the religion founded by the Arabian prophet Mohammad, who was formerly wrongly referred to as Mahomet. The name Islam means surrender, or resignation, to the will of God. From the same verbal root comes the name Muslim (Moslem or Musulman in Persia). Followers of this faith are called Musalman in India and Bangladesh also. The name is given to one who has surrendered to the religion. A Muslim is one who has given himself exclusively to God, a monotheist, a worshipper of the one God, as revealed by the Mohammad (20).

Muslims use the name Islam for their religion, and they do not like the title "*Mohammadan*" given to them by the Christians. They do not worship Mohammad, but they believe that he was the last and greatest Apostle of God, whose revelation outdates all others.

Islam is a latecomer among the world's religions. It is much younger than Buddhism and Christianity and, like them, it is a reformation of other religious beliefs, with new material added, and made into a world religion. Possibly the name Allah was used to indicate the chief God of the Kabah before Mohammad's time. The word Allah is from al-ilah (the God), but used of "*Supreme God*"; however, Arabs also worshipped other Gods. The *Quran* (*Koran*) mentions three goddesses, "*Al-Lat*, *Al-Uzza*, and *Al-Manat*", representing the Sun, the planet Venus, and Fortune. The Meccans (people of Mecca) called these goddesses the Daughters of Allah (23).

Mohammad

Mohammad was born about the year 570 A.D. This year is called "*The Year of Elephant*", in which an Abyssinian army with elephants came unsuccessfully against Mecca.

Mohammad's father, Abd Allah, had died before the child was born, and his mother died six years later. Mohammad then came under the charge of his uncle Abu Talib and travelled with him to Syria, and took part in some of the tribal skirmishes. Stories are told of angelic beings who visited Mohammad in boyhood and "*took a black clot out of his heart*". A Christian monk is also reported to have seen the seal of prophecy between Mohammad's shoulders (23).

When Mohammad was 25 years old he married a wealthy widow called Khadijah. He had already acted as her agent on a trade mission to Damascus, and his character and ability impressed her. Khadijah was 40 years old at that time, but she bore Mohammad six children; two boys died in infancy, and four daughters, one of whom Fatima is memorable for her marriage to the fourth Caliph (Khalifah, successor of Mohammad), in whose lines the Prophet's successors are revered. Khadijah was a great help to Mohammad. She encouraged him in his prophecy, and as long as she lived he took no other wife.

When he was forty years old the call to prophesy came to Mohammad. He had already become fond of solitude and used to retire to caves in the mountains to pray and meditate.

After his vision, Mohammad, like some other religious visionaries, was filled with terror and contemplated suicide. But Khadijah comforted him, and Gabriel again appeared to call him, saying: "*Thou art the Prophet of God*".

Medina at that time had been rent by tribal strife, and Mohammad was able to stabilize the situation. He was leader of an important religious community, so he set to work to unify it and to make his religion into the social and political organization that it has been ever since. He tried first of all to win over the Medinan Jews by ordering his disciples to turn in prayer towards Jerusalem, but the Jews were critical of him and ridiculed his lack of knowledge of scripture. So the Muslims turned to Mecca for prayer, and have done so ever since. Islam thus became truly Arabian,

though biblical links were not broken since the Kabah is said to have been built by Abraham (20).

At that time Mohammad had two main aims: to convert all Arabia to Islam and to purify the Kabah from idols; he was also committed to the destruction of the Jewish communities. He preached the duty of Holy war (*Jihad*), and began by attacking a caravan from Mecca. After this success he fought about a thousand Meccans at a place called Badr and routed them with three hundred Muslims. Then, having attracted other Arabs by his victories, he turned against the Jews, killing some and exiling others after taking their possessions. As a result the emigrant community at Medina was very much enriched.

Mohammad died in A.D. 632, only ten years after the Hijrah and two years after the conquest of Mecca, of abdominal problems. In the narrative parts of the Quran there are many references to stories from the Bible, especially the Old Testament. The creation in six days is often mentioned, also the fall of Adam.

Mohammad learnt much from the Jews of Medina and something from the Christians, yet he broke with them afterwards. However, Jesus has been honoured in Islam down the ages.

It appears that Mohammad employed a number of people to write down his words. It is believed by the Muslims that the revelations were given to him by Gabriel, and that Mohammad recited them to the people. Islam believes that the Quran is eternal; it is the uncreated words of God, the speech of Allah, as revealed to the prophet, recited by the tongues, preserved in the memories and written in the copies.

A mosque (place of prostration) is a building like a church, but it has no images, paintings, or decoration except for Arabic lettering on the walls. There is a central niche which shows the direction of Mecca, a pulpit, and usually a lectern. There are no pews, but mats on the floor. No music is used in worship, and there is no collection. The preacher speaks in the vernacular, quoting the Quran in Arabic and generally translating afterwards.

Almsgiving is another duty of all Muslims, as a mark of piety. According to Muslim law, one fortieth of a person's income should be given to the poor. This tends to encourage professional beggars, but that is almost inevitable in countries where there are few social services.

Pilgrimage to Mecca is a duty for all Muslims at least once in a lifetime, if one is in good health and can afford the expense. Prayer, fasting, almsgiving, pilgrimage, and the profession of faith in Allah and his Apostle, make up the five pillars of Faith.

An attempt was made to add the Holy War (*"jihad"*) as a sixth pillar of religion. The Quran gave its sanction to such war against unbelievers. Clearly this was meant for Arabia in the Prophet's day. Later it was extended to the Muslim wars of conquest in Asia, Africa, and Europe. But the fanaticism of extremists has led to a rejection of this exaltation of " Jihad " (18).

Social Customs and Beliefs

Islam claims to be a brotherhood that unites its followers. All men are the slaves of God and so are equal in his sight. This does not mean that there are no social divisions, between rich and poor, freeman and slaves, men and women. But in the mosque men bow together before one God of all. Women, however, rarely join in public worship (107).

In addition to matters of faith and ritual, the Quran contains a great deal of ethical and legal teaching. Mohammad found it necessary to lay down or begin to codify regulations for inheritance, dowries, divorce and the guardianship of orphans. Muslim ethics, like those of the Greeks, show the importance of the middle way between extremes. A great deal is said in the Quran about women. As among the Hebrews, the primary aim of marriage is regarded as the begetting of children. Partly for this reason polygamy is allowed; up to four wives, with an unlimited number of concubines (108, 109, 110, 111, 112).

Divorce is easy for men, but not for women. On pronouncing a traditional formula, divorce is attained - but the man can take the woman back if he changes his mind. A Muslim can marry a Jewess or Christian but not a Pagan, whereas a Muslim woman must marry a Muslim. If her husband changes his religion the marriage is dissolved (113, 114).

Nowadays, with the introduction of photography and illustrated newspapers in Muslim lands, a relaxation of custom is taking place. Similarly a slackening of the law against usury is allowed for those who wish to draw interest on banking accounts. In contact with the modern world many customs have to be adapted, as others have for

long been adapted in India, where Muslims have lived in close contact with the Hindus who delight in sculpture and music (115, 116, 117).

Sects

Like other religions Islam soon split up into many different sects, some of which have disappeared and are of little interest to the general, modern reader; others have lasted over the centuries, and yet others are still appearing. Only a few important ones are mentioned here (118, 119).

Shia

This is the great division that separates the followers of Ali from traditionalists (Sunni). The name Shia means *"party"* or followers and is used distinctively of the sect of Ali. The Shia preferred the name Iman (leader) for the head of the State, and believed that there were twelve divinely appointed Imans, trust in whom is an article of faith (120).

Ismailiya

The Shia soon divided into sects, of which the *Ismailiya* is one of the most interesting and the parent of other offshoots. They look upon a certain Ismail as being the seventh Iman, but unfortunately little is known about him, though his followers consider him as second only to God.

Wahhabi

This is a modern movement brought about through reactionary teaching. It was founded in the eighteenth century by Al-Wahhab who protested against innovations in Islam, especially saint worship and the appeal to prophets or angels for intercession. They are very puritanical and forbid the use of gold ornaments, tobacco, music, and even playing chess. The Wahhabi have gained control of most of Arabia, including Mecca and Medina (121).

Ahmadiyya

This sect arose in India and shows some of the religious mixture of the land. In 1880 the founder, Ghulam Ahmad, claimed to be both Messiah and Mahdi. Later he claimed to be a manifestation of the Hindu God Krishna. After his death reverence

was paid to his tomb. India has had its effect upon Islam, and other movements have arisen in the past which have sought to reconcile Islam and Hinduism (121).

Islam today

Islam is a living religion and as such is liable to change. Two centuries ago Islam might have appeared to be petrified, and destined to be swept away by the impact of the Western world, yet there has been a revival as well as adjustment to new conditions. It is exceedingly difficult to estimate the exact extent of this, since the Muslim world stretches from Africa to China and varies greatly in different places (122).

European laws and codes came to be imposed in Egypt, India, and elsewhere, leaving the traditional Quranic laws to be applied only in personal and family matters. European rule, however long it has lasted in North Africa, the Middle East, and India, has left a deep impression upon Muslim life and thought (123).

Modern science, historical criticism, and philosophy pose questions which demand an answer. Christianity has been shaken by such questions, and has had to submit her sacred documents to searching examination. Will Islam do the same? If not, will it hold its own in face of the education of the youth by western methods in Muslim lands? It is in Pakistan that some of the boldest efforts have been made to combine the best in Western thought with Muslim teaching. The University of Aligarh was founded with that express purpose (124, 125).

HINDUISM AND ISLAM

It will be realized that Islam and Hinduism are very different. The one is a stern monotheism and the other teaches absorption in the impersonal Brahman or devotion to various Gods. Yet Islam has also become one of the Indian religions. Over the centuries Islam and Hinduism have both opposed and influenced one another, and at the mystical level there has been mingling. Islam reflects the main impact of the western monotheistic religions upon the East, but this has not been without its effect on Islam itself (126).

Within a hundred years of the death of Mohammad, the Muslim armies had entered India, occupying Sind in A.D. 712. Invasion soon stopped, but missionaries and emissaries of Persian trade and culture affected Indian life. With that tolerance which has been both a strength and a weakness of India, mosques were allowed to be built (127).

With the coming of the Turks in 1022, Sind and Punjab were again invaded and annexed. In 1190 another wave from Afghanistan captured Delhi and assumed the rule of much of North India. In 1400 the Turco-Mongol Timour ravaged Delhi again with great ferocity. Many Hindus suffered in these constant raids, but even more significant was the final destruction of Buddhism in India. It had survived longer in the north than in the south, but we read of massacres and destruction of monasteries in Bihar and Benares in 1190. The Muslims fought all idolaters, but Buddhists who were centred at the monasteries were the worst sufferers. Henceforth they are to be found almost entirely outside India, except for Nepal and a few other places (128).

In 1526 the Turco-Mughal (originated in Turkey) Babar seized Delhi and founded the great "*Mughal" Empire*, which lasted until the British conquest in 1757. The "*Mughals"* built many splendid palaces and tombs, though some of them also demolished fine Hindu temples. Their most famous monument is no doubt the white marble Taj Mahal at Agra, the tomb built by the emperor Shah Jehan for his favourite wife *Noor-Jahan*.

In India and Pakistan today there are over 90 million Muslims, divided between the two states. It is important to note that most Muslims are Indians or Pakistanis, and not foreigners. Not only did the invaders merge themselves into Indian life, but there were many conversions to Islam. These conversions went largely by groups and occupations, such as weavers and butchers, and so were the more numerous (129).

In some places, Indian Muslims have adopted Hindu customs. Even the caste system is reflected in the high and low class Muslims. In certain places low caste converts are not admitted into mosques. Some Muslim villagers still worship the local gods or use a sacred fire ritual. The catholicity of Hinduism is copied in the innumerable Indian Muslim sects, and in the many saints worshipped. The Hindu holy mendicant finds his counterpart in the Muslim *" Faqir "* (20).

SIKHISM

From the fifteenth century efforts were made by a number of thinkers to combine the best in Hinduism and Islam. The earliest sect was founded by Kabir (born about 1440). He was a disciple of Ramananda, who, although a worshipper of Rama, said that the universal God may be worshipped anywhere and he admitted all castes to his sect. Kabir was a Muslim weaver of Benares, and he lived and taught in Northern India. He stood midway between Islam and Hinduism, but with a leaning towards Hinduism. Kabir's shrine at Maghor (Uttar Pradesh, India) is shared by Hindus and Muslims, a unique phenomenon (130, 131).

Kabir condemned idolatry, caste, avatars, and circumcision, but he believed in the sanctity of all life, and in rebirth. Nanak did not intend at first to found a sect, but disciples were attracted by his teaching. The word Sikh means "disciple". He declared "There is no Hindu and no Muslim". His bold utterances and his songs attracted considerable attention. He passed his life partly in teaching and partly in retirement (132).

As a poet Nanak does not equal Kabir but as a social and religious performer he did much to bring Hindus and Muslims together. He strongly opposed formalism in worship and inculcated devotion to one God (133).

The worship in Sikh temples begins with the sentence, reminiscent of Islam: "There is but one God, whose name is true, the Creator". With the fourth leader (Guru) of the Sikhs many wealthy people were induced to join the movement, and the famous Golden Temple was built in the lake of Amritsar. The Holy Book of the Sikhs (the Granth) was compiled from hymns by Nanak, Kabir, and others. Today the *Granth* lying open on a reading desk is seen in every Sikh temple, like the Bible in churches.

Persecution under the *Mughals* (Muslim emperors) caused the Sikhs to take up arms, and henceforth they have regarded themselves as a military brotherhood, one of the characteristics of Islam, usually distasteful to Hinduism. Distinctive features were adopted for Sikhs, which have remained as their badge: the hair must not be cut; a steel comb and bangle must be worn, together with shorts and a sword (134, 135).

The fortunes of the Sikhs have varied. At times they have seemed to be merging into Hinduism; at others there has been a revival of the Sikh faith. Under the British they were loyal and favoured, providing large numbers of men for the army as well as

taking easily to new Western trades. More than any other they suffered from the partition of India, and many thousands of Muslims and Sikhs were massacred when the latter were driven out of Pakistan. They were said to number over five million, but in India there is a tendency for them to be absorbed into Hinduism. One of their latest writers said: "*If the present pace of amalgamation continues, there is little doubt that before the century has run its course Sikh religion will have become a branch of Hinduism and the Sikhs a part of the Hindu social system*". But orthodox Sikhs strongly repudiate this opinion, and there is a revived Sikh communal movement (136, 137).

BUDDHISM AND JAINISM

There are two other Religions in the Indian subcontinent. During a period of philosophical development in the sixth century B.C. there arose two movements in North India which were closely connected with the speculations and disciplines of the time, but eventually became religious and philosophical systems in their own right. Jainism has remained quite small in numbers, with only something over a million adherents today (138). Buddhism has become a great world missionary religion, but almost entirely outside India (90, 103, 128)

It is interesting to note that the founders of both these religions were members of the warrior caste, the *"Kahatriyas"*, and not "*Brahmins"*. They lived in the same century. There has been some debate as to which religion is the elder, but it seems probable that it is Jainism. The Jains claim that their religion was founded by twenty-four great ascetics, of which the historical founder was only the last (139). These founders are called Jinas, conquerors or "forders", and hence their followers are called "*Jainas"* or "*Jains"*.

"Mahavira" (Great Hero), as the last of the "Jinas is called", was named "*Vardhamana"*, and was born about 599 B.C. He married and had a child, but renounced his wife and child when his parents undertook a fast unto death, which later became a practice of some "*Jains"*. The *Mahavira* gave up worldly life and the wearing of clothes, and became a wandering ascetic practising austerities and suffering persecution. After fourteen years he felt that he had solved the riddle of existence and had gained enlightenment. For the following thirty years, until his

death in 527, he lived a wandering life preaching his doctrine at the head of a group of devotees (140).

Jainism takes over the current Indian ideas of the soul, rebirth, and *karma* (action, deeds) - but it denies the existence of a Supreme Being (though not of other gods), and it considers that there are many individual souls which exist from all eternity. In direct opposition to Buddhism it teaches the existence of self as a stable and eternal principle (128, 129).

Jainism regards "*Karma*" as a poison of the soul, and it teaches ascetic methods to destroy old karma and ward off new. It abandons the Brahmin idea that salvation comes through knowledge, and replaces this by good conduct. So it teaches purity and morality (141).

The aim of life is oneself to become a "*Jina*" or conqueror. To this end groups of monks were formed to renounce the world and engage in self-denying discipline. The earlier "*Jinas*" receive great veneration and, strangely enough, this atheistic system has its temples containing images of the "*Jinas*" to which the laity bring their offerings.

The Jain scriptures, "*Purvas*" and "*Angas*" and non-canonical literature, are long and tedious. They seem somewhat older than the scriptures of Buddhism, but the two movements ran side by side for a long period and have some common features.

Jainism was not a missionary religion, as Buddhism was later, and did little to spread its doctrines. Today some Jain groups are publishing literature outside their own territory, and their great principle of non-violence or harmlessness has attracted the attention of many people outside their own ranks. Mahatma Gandhi adopted this principle in his life and work (142).

Only passing reference will be made to Buddhism here, since such a great and extensive religion is really worthy of treatment on its own. It is simply necessary to call attention to the fact that Buddhism arose in the same century as Jainism, and against the background of similar thoughts (18).

Gotama the Buddha helped to undermine the caste system and the proud attitude of the Brahmins. This had two effects. It aroused the animosity of the Brahmins, and contributed to the eventual disappearance of Buddhism from India. But it also helped Buddhism to spread outside India. In a sense, Buddhism is Indian influence exported

elsewhere. Hinduism is a national religion. To be a Hindu it is not sufficient to believe in the sacred scriptures, one must belong to a Hindu caste and keep to its regulation. Buddhism cuts free from this, and takes Indian ideas to other lands, incorporating other elements on its way (20).

Buddhism has also been called atheistic, although this has been debated. It was more correctly agnostic. Certainly later Buddhism has its many saints and gods. The Buddha is said to have asked how the invisible "*Brahman*" could be an object of worship. But *Brahman* was little worshipped, anyway, in "*Vedism*" or later Hinduism. Buddhism attacked sacrifices, but on the whole the main body of belief was accepted. Buddhism teaches "*rebirth*", "*karma*", and "*nirvana*" (going out). It differs from the Upanishads and Jainism in its denial of the existence of the self, and the substitution for this of a series of states of consciousness.

It has often been asked why, since the Buddha was an Indian, Buddhism has virtually disappeared from India. The opposition of the "*Brahmins*" has been noted. It seems probable that Buddhism was not such a popular movement in India as it became elsewhere; in its early forms it was perhaps seemed to be too austere for the masses - and was largely confined to monasteries and schools, being monastic like Jainism. Buddhism enjoyed patronage in several periods. The great king Asoka (died 232 B.C.) did a great deal to spread Buddhism. Later a "*schism*" appeared which permanently divided Buddhism into two main camps. Later still the Gupta Empire, from A.D. 320, did much to support Hindu orthodoxy. There were also the strong popular Hindu beliefs in a personal deity that were against Buddhist teaching. Finally the Muslim conquest, from A.D. 700 to 1200, brought persecution and destruction to many Buddhist monasteries.

Buddhism left its mark in India. The "*Brahmins*" and the sacrificial system never recovered their ancient power. While India rejected the Buddha's monastic way, it was deeply affected by his moral teaching by which men obtain deliverance from rebirth. Today there is a revival of interest in the Buddha as being the greatest of the sons of India.

Yet the greater mass of the Indian people remained Hindu. Some scholars speak of a renaissance of Hinduism towards the end of the Buddhist period. Others maintain that Hinduism had not diminished in strength (123).

HISTORY OF ALCOHOL DRINKING AMONG THE THREE MAIN RELIGIOUS GROUPS IN INDIA: HINDUS, MUSLIMS AND SIKHS

It will be relevant to discuss the history of alcohol drinking in India by the religious groups as the present community survey is based on the drinking pattern of three main religions: the Hindus, Muslims and Sikhs.

The history of alcohol drinking among the Hindus, Muslims and Sikhs over the centuries is well reviewed by Sing and others (107, 143, 144).

India has always been described as an abstinent culture, i.e. a society where the majority do not drink and have a clearly negative attitude towards alcohol. In such a situation one would expect the overall consumption level to be generally low. Several studies, especially in North India, show that alcohol use is, in fact, fairly widespread and social attitudes are more ambivalent than negative (110, 145).

Information from different sources, including religious texts, historical accounts and other manuscripts, obtained mainly through the library section of National Archives at Patiala and Varanasi and also of Kolkata (old Calcutta) University, has been collated to describe the social conditions of different religious groups as they existed during successive historical periods (146). Two main religions, Hindu and Muslim, dominated the picture of the history of India throughout in the past with separate social and cultural; traditions. The Sikh religion is comparatively recent and the followers are less in number than the Muslims and Hindus (20).

ALCOHOL DRINKING AND HINDU TRADITION

There is little information on the culture and drinking habits of the earliest inhabitants of this subcontinent who were probably Negroid in type. They were followed by the Dravidians whose staple diet was meat and fish with rice, who also consumed two intoxicating drinks – " Ira " and " Masura " (31). Dikshitar in his book 'prehistoric South India' states that they knew the art of "toddy tapping" and evidence from archaeological findings e.g. the presence of some *"Chunam "* - fermented palm juice like matter in a 'lota' (round vessel used for drinking) at Chuddapak also suggests the existence of a similar juice industry (147).

The Vedic period (2000 to 800 B.C.)

The principal source of information for this period is the 'Vedas' – religious books. In the *"Rig Veda"* (148) two types of beverage are described, of which 'soma juice' was the more important (149). There is some controversy as to whether this juice was used as such or after fermentation, since the word 'soma' has been used occasionally by subsequent authors as a general term for all intoxicating drinks. However, it is generally agreed that "*soma"* was the juice extracted from a plant (150) bought from the mountains where it grew wild, particularly in Manjavant in the Himalayas. It was often drunk as such or with clarified butter, milk or curds to improve its taste (151). It was believed to inspire confidence, courage and faith and bestowed powers of eloquence and immortality (152).

The other beverage was "*sura "*, an intoxicating drink prepared from fermented barley after distillation. This drink became very popular afterwards and the 'sura' still refers to any alcoholic drink in most Indian languages (150).

It is interesting to note that the process of distillation was known at that time, and Patanjali (63) in his writings describes the distilling apparatus as resembling the trunk of an elephant; hence the distiller was " *Sundin* " (trunk of elephant).

Horton (153) commented that fermentation and distillation was discovered independently in many places, but that agriculture, by making available a more abundant and more constant source of raw materials, permitted alcoholic beverages to become a significant item in the lives of a majority of the people of the world. Distillation is a much later invention, which possibly occurred in India just prior to the beginning of the present era.

The popularity of " *sura* " (alcoholic drink) at that time is evident from a verse in the " *Atharva Veda* " (154) where it is mentioned as being a reward for their performance of sacrifices. The praise of 'sura' in the 'Aitareya Brahmana' (155) and the placing of "*sura* " in vessel in the hands of a king suggest that the "Kahatriyas" (caste next to the upper caste Brahmin) were in the habit of drinking this beverage.

At the same time, *sura's* harmful effects were also well known and its use was discouraged because it gave rise to brawls in the assembly. It is regarded as being one of the seven sins forbidden by the Vedas and is classed with "anger, senselessness and gambling" (156). In the "*Yajur vedas*" recipes are given for a

number of other intoxicating drinks like "*Parisruta*", prepared by fermentation of certain flowers and fruits and 'Masara' which was prepared from mess of rice and spices allowed to ferment for three days.

During the next five centuries – the 'Sutra' Period (800 to 300 B.C.) – we can refer to (a) the Brahmanic literature viz. the Sutras, and (b) the Buddhist and Jain works which represent a non-*Brahmanic* if not exactly a *Kahatriyas* tradition.

Drinking was apparently common in the days of "*Panini*" as he mentions words meaning liquor, a distillery, must, and sediment (157). A number of occasions are mentioned in the "Sutras", as being appropriate for drinking, e.g. when entering a new house and on the arrival of the bride at the time of marriage.

Besides " *sura* " a number of other drinks were introduced during this period including " *Kilala* " a sweet drink prepared from cereals (158), and " *Maireya* " a spiced drink prepared from gud (brown sugar) which became very popular. Wines were also imported, chiefly from "*Kapisi*" (in Afghanistan), and commonly known as *"Kapisayani'*.

" *Soma* " juice continued to be used in religious ceremonies, but is no longer mentioned in domestic rites (121). The scarcity of the plant may have been one reason since the "*Sutras*" specifically mention "*adara*" and " *parisruta* " as substitute beverages for use in rituals.

The evil effects of drinking are also mentioned in the " *Dharam Sutras* " (159) where it is regarded as a heinous crime, and the use of liquor by Brahmin students is strictly forbidden (160). Among various social castes, the Brahmins are repeatedly and specifically forbidden from taking any intoxicating drinks. The " *Kahatriyas*" and *"Vaishyas*" on the other hand were permitted to partake of liquor prepared from honey, madhuka flowers and gud (made from sugarcane), but not distilled spirits made from cereals (161, 162). The "*Jakakas*" (20) which represent the Buddhist and Jain traditions, also affirm that during this period liquor was manufactured and consumed on a large scale. Taverns were present in most cities and were distinguished from other shops by flags (144). At the time of festivals and feasts, drinking was permitted and friends invited (163).

It is mentioned that even women and hermits drank a great deal on some occasions (164). Among the ruling classes, drinking was apparently socially acceptable e.g.

King Duvaya is said to have entertained the members of a marriage party with all kinds of liquor and wines (165).

The Buddha and Lord Mahavira did not allow their followers, especially monks, indulgence in wine (alcoholic drink). In fact, the Jain religion does not permit even to reside at a place where jars of wine are stored (20, 81). However, other believers were allowed to drink on certain occasions or in the case of illness (81). The evil effects of drinking are mentioned in several places and an example is given of the princess of Bavaria who was ruined because of her addiction to 'kadambari' wine.

Maurya and Sanga Period (300 B.C. to 75 A.D)

For this period we have information from the *"Arthashastra'* of *'Kautilya"* the edicts of "Ashoka", the writings of "*Patanjali*" and accounts of Greek historians. From the writings of "*Kautilya",* it is apparent that drinking was fairly common and well organised. There was an official Superintendent of liquors, and the manufacture and sale of wine was a State monopoly, although on festive occasions the right to private manufacture of beer for four days was recognized on payment of a licence fee (166).

There were well appointed liquor shops providing rooms, beds, and seats with other comforts such as scents and flowers. These shops were located at specified distances and liquor was sold only to persons of good character, and in small quantities.

During this period a number of new wines, particularly of grape origin were introduced, although the two most popular varieties " *Kapisayani"* and "*Harahuraka*" were still imported from Afghanistan (167).

"Patanjali" mentions that there were some people who could drink a complete jar of wine through a pipe made of reeds and elsewhere states that a Brahmin woman who indulged in drinking would be deprived of her husband's company in the next world. "*Kautilya"* (168, 169) observes that: "*the harmful effects of excessive drinking are loss of wealth, friends, desertion by virtues and suffering from pain*".

In the Epics, there are numerous references to drinking. In the "*Ramayana"(*128) for instance, it is stated that drinking was common in Ayodhya (city in India). After the departure of Rama the city was compared to a tavern deserted by drunkards. Conditions described the "*Mahabharata"* are similar if not more licentious. Lord

Krishna is said to have enjoyed drinking freely with Arjuna (ancient king in India), and we are told that the *"Yad"* were killed in a drunken brawl (156). Even virtuous ladies such as Sudesna drank wine; some of them drank so much that it is said that they could not walk straight (170). In spite of the widespread use of alcohol, even he, who drank the most, considered it sinful.

It is during this period that social class differences appeared concerning alcohol use, e.g. to drink liquor prepared from molasses was considered inferior to the use of other types of liquor and wines (171). *"Maireya"* seems to have been the most popular drink and is said to have been the wine served by the sage "*Bhardwaj"* to the party of the Bharat (172).

The Kusana and Saka Satarahana Period (75 to 300 A.D.)

The principle sources of information for this period are the medical treatises of *"Charak"* and *"Susruta"* as well as the "*Samhitas*" of *"Bhela"* and *"Kasyapa"*. They all prescribe a limited use of wines and consider the habit good for health, especially in the winter season. " *Charak"* (173) for the first time makes a distinction between drinking in moderation and excessive drinking; whereas the former is regarded as pleasing, digestive, nourishing and providing intelligence!, the latter is said to cause various ailments. "*Charak"* comments thus: "*Food, which is the life of living creatures, if taken in proper manner, acts as an elixir* ". Then, in reference to alcohol, he goes on to state: "*if a person takes it in the right manner, in the right dose, in the right time and alone with wholesome food, in keeping with his vitality and with a cheerful mind, to him, wine is like ambrosia. On the other hand, to a person who drinks whatever comes to him, and whenever he gets the opportunity, and whose body is dry on account of constant exertion, this very wine acts as a poison*" (156).

"*Charak"* describes in detail the different modes of consumption, the types of wines, and the accompanying foods to be taken by persons of difference morbid humours *("Kapha", "Pita"* and "*Vata"*) and of different psychic types *("Sattic", "Rajasic"* and "*Tamasic"*). He also gives a detailed clinical description of the three stages of intoxication and then proceeds to give numerous recipes for the treatment of the problem of alcoholism, suggesting that there must have been a considerable number of people who were drinking to excess.

The Gupta Period (300 to 750 A.D.)

There are many references in the "*Anga Vijja*" (174) and in the works of Kalidas (175, 176), suggesting that the use of alcohol during this period was common. It is even believed that a state of intoxication gave a special charm to women and that many ladies of royal families, e.g. "*Indumati* ", the Queen of *Aja*, enjoyed drinking.

Police officers, soldiers, and their friends are singled out as enjoying themselves by drinking at liquor shops. The "*Matsya Puran*" describes *Krishna* (Hindu God) as drinking with sixteen thousand ladies and does not consider him a sinner.

The famous Chinese historian who visited India, Yuan Chuang, mentions that the "*Kahatriyas*" preferred wines made from the juice of grapes or sugar cane, whereas the lower caste "*Vaishyas*" and "Sudras", drank strong fermented drinks. It was reported that in South India, too, drinking was common except among the Brahmins. Whereas the rich drank liquor imported from the West, the poor enjoyed country wine.

The Post Gupta Period (750 to 1200 A.D.)

During this period it appears that the habit of drinking had spread to a considerable part of Indian society. Even Brahmin youths are described as wasting their time in the company of dancing girls who were addicted to drinking (177) and "*Somadeva*" gives an interesting account of such a drinking place in his " *Katahasaritsagar*" (178). On marriage and on other festive occasions, drinking was common among the "*Kahatriyas*". "*Medhatithi*" (179, 180) also confirms that while on such occasions Brahmin women did not drink, Kahatriyas and other caste women often indulged in excessive drinking.

At the same time, "*Somadeva*" (181) condemns drinking and considers it the root of all evil since it completely deludes the mind. He cites the example of the 'Yadavs', who were ruined on account of their drinking habit. Most of the "*Dharamshastras*" (religious books) of this period also condemn drinking by the higher caste (182) but no mention is made of the lower caste "*Sudras*" among whom, according to Alberuni, drinking was common and acceptable.

Muslim Tradition of Alcohol Drinking

Drinking is expressly forbidden by the Quran (183), the religious book of the Muslim faith, but was recommended by the Persian tradition in equally unequivocal terms. "*Wine is the best restorative for health*', so runs a precept, *if taken in moderate quantity. A modest measure of drink will do you no harm, as much as any other beneficial drug, and is even an elixir*" (184, 185). It is difficult to mention any social group in Muslim society which did not drink, despite religious injunctions to the contrary.

Historian Sir Henry Yule (84) reports that it was a common practice first to boil the wine until it changed flavour and became sweet in taste, though still retaining its intoxicating powers. By thus changing its name with the changing flavour, its use was no longer considered forbidden under Muslim law. Another common belief was that the use of salt or spiced relishes along with wine made its use lawful (186). It is said that many ignored the provisions of Islam with regard to alcohol (187).

All the *Moghul* emperors drank heavily and it was but natural that their subjects should follow their example (22).

It is reported by Chand (156) in the *"Akbar-Nama"*, history of the famous Moghul king of India , that soldiers and military officers were addicted to drinking with a passion, and even women, tutors of children, and priests resorted to drinking in secret. Rituals and elaborate ceremonies were soon developed for different occasions, e.g. when drinking to the health of a guest or celebrating a military victory. Festivals and public functions were occasions for mass drinking.

The State looked upon the evil of drinking with indifference. Ala-ud-din Khilji (famous Moghul emperor) was the only monarch who tried to suppress drinking completely by instituting rigorous controls on the manufacture and sale of alcohol. In response to these prohibitive measures, people resorted to the familiar practice of bootlegging; they began to smuggle spirits concealed in *waterskins* hidden under loads of hay and firewood. Finally he was compelled to modify and relax his measures, and a new regulation was introduced which did not prohibit the manufacture and use drink in private but made its public distribution and the organisation of big drinking parties

illegal. His successor, Mubarak Shah, continued with these modified rules (186, 187).

The Moghul emperor Akbar, more out of concern for the health of his subjects than any ideology, tried to control or limit the use of alcoholic beverages. He opened a number of public drinking places which were under official supervision and where registers giving particulars of sale to every individual were maintained. He personally felt that moderate drinking was good provided the person consulted a physician and took due care of his health and also provided that such drinking did not lead to the commission of a public nuisance. Separate bars were opened for 'common drunkards' where apparently fewer restrictions were enforced (187).

Akbar's son Jehangir, though himself a moderate drinker, attempted to go a step further, and issued an edict completely prohibiting the sale of wine and "*bhang*". Those who tried to break the law were punished severely. However, as commented by Singh (188) it is apparent that his attempt like the previous one was not very successful and from the time of Shar Jahan to Mohammed Ashraf 'people took wine like water'.

Thus throughout the Muslim period we find alcohol being used freely and to some measure being socially acceptable. The famous historian Khusrau (184) comments on the social climate of this period in the following words: "*Young and old, Hindu and Muslim, rich or poor, freely indulged in the two vices (wine and women) indifferent to religious prohibitions or consequences, as far as their means and health permitted*".

History of Alcohol Drinking and Sikh Tradition

By the turn of the 16th Century the population was sharply divided into the two religious groups – Hindus and Muslims – each with their own traditions and customs. It was left to Guru Nanak (creator of Sikh religion) and his successors to harness the spirit of tolerance and give it a positive content in the shape of Punjabi (Punjab State in the North West India) nationalism.

Although some of the founders and leaders of this movement were not agriculturists, its background was in the "*Jat*" peasantry of the central plains of Punjab. The Jat peasantry had a warrior tradition and is known to have fought more battles than the "*Kahatriyas*" for the defence of his homestead and, unlike the latter, the Jat seldom

fled when invaders came. The Jat gradually developed an attitude of indifference to worldly possessions and a willingness to gamble with his life against odds since the future was always uncertain. During this period alcohol continued to be freely used both by the Jat peasantry and the princely classes. Maharaja Ranjit Singh has been described as a heavy drinker (reported in the Excise administration of the Punjab, 1947- 48). Subsequently under the influence of the "*Singh Sabha*" and "*Arya Sanaj*" reform movements, the use of alcohol and other intoxicants came to be looked upon as an evil by a considerable section of the population. Their influence, being the greatest among the educated, middle class urbanites particularly in the relatively more developed "*Majha*" region of Punjab, had little if any impact among the predominantly rural, agricultural *'Malwa'* region. A comment in the administrative report of the Excise department of Punjab for the year 1947-48 reflects the extent of both licit and illicit distillation and consumption of alcohol in Punjab during that period. It states: "due to the influx of a large number of liquor consuming refugees from West Pakistan, illicit distillation has assumed alarming proportions. The illicit distiller now not only distils for personal use but also for earning a livelihood" (121).

Some Comments on Alcohol Drinking in the Islamic World

The history of alcohol drinking and the Muslim tradition have already been discussed earlier. However, the writer thinks that it may be appropriate to discuss this matter further in view of the myth regarding the abstinence of the Muslims and also the findings of the Muslim subjects' alcohol drinking habits in the present survey (189).

The use of alcohol as a whole in the Islamic world and the control of alcoholism within the context of the overall socio-cultural changes within the early Islamic community are discussed in by Baasher (190) in his interesting article.

At the very beginning of the Islamic era, the drinking of wine is clearly identified as being a disruptive social evil and was effectively dealt with. As commented by Badri (191), after fourteen centuries the successful Islamic model of alcohol abstention and prohibition still stands out as exceptional, indeed almost unique, in human history (191).

An attempt will be made in this chapter to describe the systematic approach that was implemented in the first Islamic society and how that helped in the voluntary surrender of the centuries old use of alcohol. A number of questions will be raised. For instance, although Islamic teachings clearly succeeded in persuading early Islamic societies to give up the use of wine, to what extent has that been observed over the years - and is it still observed in the Islamic world today? How influential is the Islamic tradition in shaping human behaviour and in preventing the use and abuse of drugs and alcohol among the changing Muslim communities?

To answer these questions, as well as others, a brief outline will be given of the basic social principles that have been developed in the Islamic states to govern the use of alcohol and drugs. Because the use of drugs is intricately enmeshed in the human ecology, cultural matrix and historical background, due consideration will be given to these inter-related factors in discussing the Islamic world's response to these substances.

Basic Changes in the Islamic Approach

In the pagan, pre-Islamic Meccan, society, the social order and moral values closely reflected the cultural heritage of the various tribal groups living in the area. Social and political loyalties were invested in tribal leaders; spiritual life was centred around animistic beliefs. Among those rival tribal groups and generally poverty stricken people, alcoholic indulgence was highly praised for its pleasure- producing euphoric effects. Besides alcoholism, pre-Islamic social life was riddled with a variety of harmful practices, such as the killing of male children because of poverty and/or female children for fear of shame.

Over a period of 25 years, and through repeated Revelations, the prophet Mohammad communicated the Islamic message to his followers. These Revelations were sacredly embodied in the holy book, the Quran (192). Indeed the Quran has been represented as *"the discernment (furgan) between truth and error"* (193). In brief, the Quran, besides being a religious doctrine, constitutes a code of civil and criminal law as well as social behavioural codes (194). It forms the most basic reference book in the Islamic world

Development of a Religious Community

It must be emphasised here that, whilst the problem of alcoholism was systematically approached, a series of holy commandments with major social implications were also prescribed and applied. Under these guiding Islamic principles, as well as others, a completely new religious community with a close-knit human relationship was formed. Within the religious community and under the great leadership of Prophet Mohammad, it was possible, efficiently, to deal with a host of social issues in general and with the problem of alcoholism in particular. It must be remembered that alcohol was singled out because it was the only habit forming and dependence producing drug known to the early Islamic community. This has to be taken into consideration when discussing later the use of narcotic substances in the Islamic world (195).

The Islamic Approach

In general, the Islamic doctrine is based on the holy religious commandments regarding right or wrong. However, it is up to man to believe or disbelieve and thus he enjoys infinite rewards or faces severe punishment at the Day of Judgement. Nevertheless, there is always hope for redemption, since God is ever forgiving and merciful. The later concept generally holds great therapeutic potential and provides a positive opening for a Muslim deviant.

Similarly, in dealing with alcohol-related problems, a gradually implemented move and a systemic approach was carefully applied.

Islam and the Prohibition of "Khamr" (Wine)

A. First Quranic Revelation (Step I)

It is instructive to describe, albeit briefly, the evolutionary steps through which the prohibition of "*khamr*" (wine) was gradually achieved. The first Quranic revelation regarding wine occurred at Mecca before the Prophet Mohammad emigrated to Medina, where the inhabitants were more responsive and readily joined the Islamic movement (196).

It was an appropriate eye-opener for the staunch believers at this stage and prepared the way for the second step.

B. A Great Sin (Step II)

The stage was carefully set and the dialogue concerning '*khamr*' (wine) continued among members of the Islamic community. Hence came the second Revelation in response to questions addressed by some of the believers to the Prophet Mohammad (197). However, there is no doubt that it generally alerted the Muslim community to the harmful effect of "*khamr*" and prepared the way for the third and more decisive stage, when partial prohibition was observed.

C. Partial Prohibition (Step III)

While Muslim society was becoming more conscious of the evil effects of '*khamr*', it happened that one of the Muslim leaders (Imam) who was leading the evening prayer in Medina was too drunk, because of alcoholic indulgence, to recite the Quran correctly. As prayers constitute one of the five basic 'cornerstones' of Islam, that incident seriously demonstrated the harmful effects and sinful outcome of '*khamr*'. Naturally the question of what to do and how to deal with "*khamr*" gradually became a major issue (198). In the circumstances, the appropriate psychological climate had been created for more restrictive action against the use of "*khamr*".

At the early mass prayer in the mosque, the influence of group dynamics was optimally utilised to induce the hard core of chronic alcoholics to conform socially to the new religious life. Obviously there were no available sedatives or analgesic medication to treat any withdrawal symptoms. However there were a number of psychosocial factors which possibly helped even the hardcore to abstain and maintain a state of sobriety.

D. Commandment to Desist (Step IV)

Although there is no data to indicate statistically the percentage of those who managed to abstain from alcohol drinking as a result of three successive Revelations

and the heightened response of the religious community, evidence shows that overwhelmingly psychological and social changes had prevailed among the population in the city of Medina and that, over the preceding three years the scene was appropriately set for more preventive and prohibitive measures (199).

It is important to point out that the religious implication of the underlying meaning of desisting, as indicated by the Prophet, involves more than sheer abstaining.

Punishment of those who consume alcoholic drink

While the great majority of the Islamic believers faithfully complied with the holy commandments to desist from drinking alcohol, there were an exceptional few who did not, and were reported to the Prophet. Since that time the question of punishment of an alcoholic person has raised interesting issues in the Islamic world as a whole.

Although the Quran provides certain specifications regarding the punishment of social offences and immoral acts, such as adultery, theft, etc., no such references were made with respect to the punishment of an alcoholic. In the circumstances and under divine guidance, the Prophet, however, would indicate the type of punishment to be applied (200).

At the time of the Prophet, a range of punishments for alcoholic persons, from that of reprimanding and group scolding to lashing with palm branches, was reported. However, the number of lashes never exceeded forty in number (200).

In essence, the type of punishment had been left flexible, depending on the nature of the alcoholic problem, the seriousness of the offences and the prevailing circumstances. However, the forty lashes punishment was later applied as the rule of Hadd by the first Caliph, Abu Bakr. At a later period, when the Islamic State was extended to include Iraq, Syria, and Egypt, the nature and extent of alcohol related problems became relatively more serious and the second Caliph, Omar, increased the punishment to " 80 lashes ". .

In historical perspective the punishment of alcoholics continued to be subject to changing circumstances in the Islamic world within the framework of "*ta'azeer*", and as seemed appropriate by the consensus of Muslim jurists and scholars.

Despite the socio-economic differences and varying cultural heritages among the Muslim countries, the practice of Islamic doctrine is considered to be the most essential factor in maintaining a low prevalence rate of alcoholism in the population of these countries compared to the other parts of the world (200).

SUMMARY AND CONCLUSION

From the earliest recorded history we find that the Dravidians knew the art of toddy tapping, while the Aryans used fermentation and distillation for preparing their alcoholic beverages. Among them, only the " upper caste" Brahmins were prohibited from taking alcoholic beverages of any kind, whereas the " middle caste " Kahatriyas were enjoined not to partake of liquor prepared from cereals including on festive occasions.

The Jain and Buddhist religions on the other hand, forbade the use of alcoholic drinks as well as meat in any form. Their influence was, however, geographically limited to the western and central parts of India. People in the north (as depicted in the Epics) continued to be non-vegetarians and drinking was common, particularly among Kahatriyas. In this context a spirit of compromise may be detected in a verse from the Manusmriti which states: "*there is no harm in eating meat or drinking intoxicating liquors as it is the natural craving of man, but abstaining from them is meritorious*" (22).

During the Muslim period we find an even greater divergence between religious injunction and actual practice. Almost all the members of the ruling classes and the army drank heavily and it is no wonder that the attempts at introducing prohibition by Ala-ud-din Khilji and Jehangir proved unsuccessful.

In the Punjab, where we find an intermingling of both the Hindu and Muslim traditions, we also find alcohol being used extensively by both the rural agriculturalists as well as the princely ruling classes. Social controls and religious teaching helped to restrict its use to some extent. However, there is now evidence

that alcohol use has spread very rapidly to all sections of society in Punjab in the last decade (187).

It is apparent that there is, in fact, no definite cultural tradition in India which could be described as being clearly and unequivocally against the use of alcohol in any form and under all circumstances. Although alcohol is frequently referred to as an evil, it is at the same time socially accepted and glamorised by its use among the ruling classes. This attitude fits in with what Pittman (189) refers to as an ambivalent culture in which sternly negative and prohibitive attitudes co-exist with attitudes actually idealising intoxication leading to a sort of battle between the ascetic moralists and the hedonists. As a result, the use of alcohol has never become integrated into normal everyday life or social rituals; so that, among those who drink, the amount of alcohol ingested tends to be large and intoxication regarded as a desirable

CHAPTER 2
ALCOHOL IN MODERN INDIA: AVAILABILITY, ATTITUDES AND CONSUMPTION

In this Chapter, the study at the centre of this dissertation is set into the context of the role and current status of alcohol ingestion in modern India, defined as the period since independence in 1947.

While my own study was limited to the State of West Bengal in Eastern India, the material reviewed in this Chapter covers the whole of India. However, it is difficult to accurately and succinctly summarise alcohol drinking patterns in India as a whole, as these vary from State to State; traits of both abstinence and permissiveness toward drinking exist across the Indian population. The contemporary drinking pattern reflects changes that have taken place in social, political and economic spheres since independence from British rule in 1947 (201, 202).

AVAILABILITY OF ALCOHOL

The recent social changes in India have been described by Srinivas (203). To summarise, the lower caste groups (*nimna varna*: darker colour), as they gain upward mobility, will attempt progressively to adopt the norms of upper castes (*uchha varna:* lighter colour), the highest being the *Brahmins* There also has been a predominantly urban trend to modernise "untouchables" (people from lower caste, who should not be touched for the work they do, such as cleaning toilets and roads and other forms of basic work) towards the higher castes, with an adoption of Western lifestyles, acquisition of material goods and growth in consumerism (204). India has not been able to change its traditional cultural heritage.

These conflicts are arguably reflected in the use of psychoactive substances, in the following ways.

1. The use of plant products such as *marijuana* and *opium* has decreased in the rural areas where agricultural advances have taken place. Home brewing of alcohol has remained a cottage industry and the use of commercially produced alcohol has been added to it.

2. Distilled spirit with high ethanol content has emerged as a major preference among consumers, attracting new drinkers from previously abstinent urban social groups who did not have any experience with home brews and could be viewed as naïve with regard to all alcoholic beverages (205).

3. The percentage of beverage alcohol (among total alcohol produced) was around 2.07% in the period 1951 to 1955, but rose to 42.14% by the end of 1990 (204).

At present three main types of alcohol preparation are available in India:

1. Country liquor.

2. Indian made foreign type of liquor.

3. Illicitly distilled liquor.

More than 200 varieties of country liquors, which are mostly distilled spirits, are available under different vernacular names in the different states of India. The country liquors are referred to as "*arrack*". These are distilled from different grains, rice, and sugar cane. "*Toddy*", which is used as a drink in many parts of the country, is produced by fermenting the sap obtained from the incised spathes of various species of palm, especially the *palmyra* (fruit) and coconut. Beer and distilled spirit such as whisky, brandy, rum, and gin (brought to India by the European colonialists) that are produced within the country are referred to as "Indian made foreign liquor". They are much cheaper than the imported foreign liquors and can be purchased in most towns and cities of India. There are now more than 200 brands of whisky, 50 of rum, 30 of brandy, 10 of gin, and 50 of beer marketed in India (206). Wine has not been popular and until quite recently was not produced in India; even now, very small amounts are made compared to other types of alcohol.

It is reported that (207), country liquor accounted for 86.5% of alcohol sales. Country liquors are much cheaper than other types of alcohol prepared in India and are widely available all over the country, in cities, towns, and in most villages. About 15% of alcohol consumers surveyed admitted purchase of illicit liquor from bootleggers and 45% admitted preparing liquor at home for personal consumption. The illicit liquors found to be available in the Punjab State of India (and the situation in other States of India is most probably very similar) fall into three categories:

1. Home-made for personal consumption

2. Home-made for sale in the same rural community

3. Liquor made by professionals for sale in the cities and towns through licensed or unlicensed liquor shops, and also bars and restaurants.

TRENDS IN ALCOHOL PRODUCTION AND SALES

Trends in alcohol-related problems in any country are related to trends in alcohol consumption, while trends in alcohol production and sales are closely linked to alcohol use (208). Unfortunately, accurate and reliable data on alcohol production and marketing are not available in most developing countries, including India. It is reported that, since the early 1970s, many developing countries have shown a large increase of alcohol consumption (209). Because of the lack of availability data, studies comparing alcohol use and production in countries across the world have excluded India (210). A variety of sources, including published/ unpublished reports and reports in non-academic literature, indicate that alcohol production and sale in India have been markedly increasing, "*liquor is as easily available as tea leaves in most parts of the country*". Kumar and Dube, writing in *India Today,* have published extensive cover stories on the "*growing malaise*" of "*alcoholism on the rise*" (210).

ALCOHOL INDUSTRY

The Indian alcohol industry has been showing steady growth. It was recorded as 5% in the early 1980s, growing to 12-15% by the early 1990s, and has continued to increase steadily since. The consumption of Indian made foreign liquor (including whisky, brandy, rum, and gin) has also gone up steadily; the most commonly (about 69%) consumed is whisky (210, 211). Beer is also finding widespread acceptance in many States, mostly in the cities. About 500 million bottles of beer are drunk annually. The current process of economic liberalisation coupled with a relaxation in government regulations has attracted many international alcohol manufacturers to India "*not only to export whisky to India on much easier terms, but also produce their famous brands in India for local consumption*" (212, 213).

AVAILABILITY OF ALCOHOLIC BEVERAGES

Most State governments now adopt a liberal attitude to the issuing of licenses to start distilleries and breweries, and for opening liquor shops. Andhra Pradesh State has granted licenses to 24 private distilleries and breweries (source: *Times of India*). A survey in the Hyderabad State of India identified 700 liquor shops compared to 1000 fair price shops (shops selling essential commodities). For the upper and middle socio-economic classes, bars and pubs are emerging in many places. A potential year-on-year growth of 100% has been predicted for the city's pubs (206).

EXCISE ON LIQUOR

In most states of India, excise duty on liquor contributes about 10-12% of the annual State revenue from all sources (206). In Maharasthra State, annual sales of liquor in its most backward district, Gadchiroli, amounted to 70 million rupees (approximately one million pound sterling) , which was equivalent to the government's support for the district's annual development plan . Most States have registered a considerable increase in revenue from excise on liquor (206).

ADVERTISING OF ALCOHOLIC BEVERAGES

Advertising of different alcoholic product is an important aspect of marketing (206). It is interesting to note that advertisements for alcoholic beverages are not legal in India. However, Singh (213) observed that it is difficult to find a magazine without an advertisement for alcoholic drinks as the liquor companies in India have perfected "*the fine art of bending the rules, without breaking them*". The brand names of alcoholic beverages are advertised using the proxy of soda, snacks, mineral water, or even designer glasses, but no one is left in any doubt as to what the advertisement actually conveys. Different brands of alcohol are also promoted through the sponsorship of major sporting and cultural events.

ILLICIT LIQUOR

The most striking evidence of the large scale production and sale of illicitly produced liquor is the frequently reported high levels of mortality and morbidity, especially blindness, due to alcohol poisoning now often reported in all Indian States. Singh

(213) reported that, on average, 200 people are killed in India every year from liquor poisoning. Many alcohol drinkers, especially those who become dependent on alcohol, often switch over from conventional spirits to illicit liquor because they are much cheaper. Typically, people who consume illicit liquor are young, belong to the lower socioeconomic strata of society, live in urban slums or rural areas, and are labourers or daily wage earners. At the upper end of the social scale there is a craze for whisky, particularly Scotch whisky, which is considered by many to be much safer for health than Indian whisky. A bottle of Scotch whisky can cost around 4000 to 5000 Indian Rupees (about £80.00), whereas Indian made whisky costs around 600 to 800 Indian Rupees per bottle (about £10.00). A survey in some of the big cities of India estimated that the black market in counterfeit Scotch whisky (Indian whisky in a Scotch bottle) is about 12 million bottles a year (213).

COMMUNITY ACTION AGAINST ALCOHOL DRINKING

One of the most visible indicators of the extent of alcohol-related problems is the community action against alcohol use and sale springing up in many parts of the country. Many of these anti-alcohol movements are spearheaded by women. In many places, the local community has been successful in preventing liquor sales and closing down liquor shops. Thousands of men have given up their regular drinking habits as a result of community pressure. These types of community action programmes have taken place in many States, including Andhra Pradesh, Hariyana, Maharasthra, and Bihar (212, 213).

INVOLVEMENT OF NON-GOVERNMENTAL ORGANISATIONS

During the past two decades, a number of voluntary organisations have been carrying out a variety of activities in the area of substance abuse in almost all the states of India. Many are involved only in prevention programmes, but some have also developed awareness building, education, and long-term rehabilitation programmes. Many large private companies have joined with Government institutions to develop effect of harmful use of alcohol assistance programmes to assist with alcohol-related problems. For example, the T.T. Ranganathan Clinical

Research Foundation has developed a training programme for factory supervisors to help them to identify "alcohol-dependent" employees (214, 215).

ALCOHOLICS ANONYMOUS GROUPS

Traditionally there have been few A.A. groups in India, but the number has grown considerably in the last two decades. They were originally found only in big cities and the only participants were English-speaking persons belonging to the middle and upper socioeconomic classes; now they conduct their meetings in various local languages in cities and towns, though they are not yet commonplace in rural areas (216).

TYPE OF ALCOHOLIC BEVERAGES COMMONLY CONSUMED AT PRESENT

As discussed earlier, India varies in its topography, climate, vegetation, culture, and traditions. Different kinds of alcoholic beverages are consumed by people from different backgrounds, which can be broadly divided into the following categories:

1. Indian made liquor.
2. Imported foreign liquor consisting of whisky, rum, gin and brandy (with a maximum permitted alcohol content of 42.8%).

In this latter category, whisky is the most popular alcoholic drink. Indian produced country liquors are distilled alcoholic beverages made from locally available cheap raw materials such as sugarcane, rice, palm, coconut and cheap grains, with an alcohol content of 40% or more. Common varieties of country liquors are *"arrack", "desi dara"* and *"tan"*. Illicit liquors are normally produced in small production units, often illegally, with raw materials as mentioned earlier. With no legal quality control over them, the alcohol concentration of illicit liquor can be as much as 60%. Adulteration is quite frequent, industrial methylated spirit being the most common additive; this often causes incidents such as mass poisoning, with consumers losing their lives or suffering serious and sometime irreversible damage to their bodies. Being cheaper than liquors produced legally in India, the illicit liquor is very popular among the poorer section of the population. In most parts of India, illicit liquor, often called "*Desi*" (country made) is produced widely and its marketing is like a cottage

industry, easily available from most of the liquor shops especially in the small towns in the countryside (214).

Home production for consumption by the producer is also common in some parts of India (212), with as many as 45% of inhabitants producing their own liquor at their homes for personal consumption. Home fermentation and distillation are also common in numerous tribal areas of India, especially in the North East region. The production of ordinary beer and strong beer is also increasing steadily for local consumption and export, though beer drinking is not yet very common in India.

The health sector of the Indian government has been trying to create awareness of alcohol related issues, and is in the process of developing a basic infrastructure for the prophylactic and therapeutic treatment of different stages of alcohol related problems in different states of India.

Indian society is currently undergoing another tectonic shift in its socio-economic fabric (206). A major impact of globalisation and economic liberalisation (in particular, exposure to satellite television, rapid socio-economic transition and growing disposable incomes) appears to be a widespread attitudinal shift towards to greater normalisation of alcohol use. There has been a significant lowering of the average age of initiation to the drinking of alcohol. Alcohol sales registered a steady growth rate of 7-8% between 2002 and 2005. The largest expansion has been seen in Southern India, which has been driving most of the economic growth and is mostly focussed on the non-traditional segment of urban women and young people, with a visible upward shift in rates of drinking among urban, middle and upper socio-economic sections of Indian society. The country liquor and whisky segment that earlier accounted for over 90% of documented consumption has seen stagnation due to the growth in the non-traditional sectors of beer, white spirits and wine. A new group of consumers is forming and a novel convivial pattern is changing older drinking norms. As the increased consumption converges on the signature pattern of frequent heavy drinking, the burden of health due to alcohol drinking will mount dramatically. It is often assumed that non-communicable diseases affect higher social classes disproportionately, as mortality levels fall and national incomes increase. In low-income countries such as India, the prevalence rate of use of alcohol and tobacco is higher among the poor, which increases the risk of cardiovascular diseases, cancer, liver diseases and injury among the poor relative to

the better-off. There is also a strong association between the use of tobacco and alcohol, which has been mentioned elsewhere in this thesis, and impoverishment through borrowing and distress-selling of assets to meet the cost of hospitalisation (206, 216).

The Government of India has funded 483 detoxification and 90 counselling centres countrywide, under the auspices of the National Drug De-addiction Programme, to treat people with substance abuse disorders; 45% of people seeking treatment in these centres are doing so for harmful effect of alcohol. The number of centres created is not adequate in view of the population and the vast size of India; most of these centres cannot function as they often only receive a one-off grant. Paradoxically, the rates of help-seeking in these centres are lowest in those States with the highest prevalence of alcohol use and abuse. Also, the overall efficacy of treatment programmes provided is low (217).

There is substantial evidence from India that the most correct direction of policy is to focus on macro-environments and make them more conducive to promoting health behaviours than to bank on individual behaviour change. However it may not be likely that the State Governments publicly recant their beliefs in the prohibition of alcohol control and try to extricate themselves from public funding of health care. Private expenditure already accounts for nearly 82% of the total amount spent on health in India (217).

NATIONAL MASTER PLAN

The Government of India formed an expert committee in 1986 to develop a comprehensive strategy for the reduction of both supply and demand of all substances of abuse, including alcohol. In recognition of growing problems posed by the steadily increasing consumption of alcohol in most parts of the country, together with abuse of other substances, needs in this area were reviewed and a national master plan developed. The main goal of this plan was to assess the efficacy of the present strategies for prevention and management of drug and harmful use of alcohol , as well as to develop specific plans for the next five years (218). The main areas of the plan were designed to cover:

- The role of State Government in the field of drug and alcohol abuse and prevention;
- Producers for determining financial assistance to non-government organisations;
- Measures for coordination among various agencies, concerned with control and supply/demand reduction of various harmful use of substances;
- Training needs of various categories of government and non-governmental functionaries engaged in substance abuse related activities;
- Creation of public awareness regarding the harmful effects of substance use and abuse;
- Measures for prevention of relapse after treatment;
- Development of a national level of monitoring system (219).

During this century, Mahatma Gandhi, the main leader of the India's freedom struggle from the British rulers and father of the nation, campaigned constantly against liquor production and sales. The Indian National Congress Party recognised prohibition as one of the main tasks confronting the country and the importance of dealing with it. So, after India attained Independence in 1947, the Indian Constitution incorporated prohibition among the "directive principles of State policy". Article 47 of the constitution of India states that: "*the State shall endeavour to bring about prohibition of the use, except for medicinal purposes of intoxicating drinks and drugs which are injurious to health*". However, during more than five decades since Independence, the political commitment to implement prohibition, either partially or fully, has been fluctuating widely in different States, and today it is almost non-existent anywhere in India (220, 221).

The government of India did not give up its efforts to implement prohibition all over the country. In 1964, it appointed another committee, popularly referred as the "Teckchand Committee" (named after its Chairman), to submit fresh proposals for prohibition of alcohol and drug abuse. Although the committee prepared a very comprehensive report and made excellent recommendations, most of the States did not follow them up (222). During the 1970s, Tamil Nadu and Gujrat were the only States in India that continued with prohibition. In 1977, when there was a change of political party at the head of central government with a new prohibition, Prime

Minister (Morarji Desai), there were again talks of nationwide total prohibition but the effect 'fizzled out soon after' (222).

During the last decade, the liquor policies of the Governments of various States have been one of the most controversial issues in the country. Revenue from the sale of beverage alcohol now contributes substantially to the state exchequers. The alcohol industry contributes well over 170 billion Indian rupees (about £2.4 billion) to different States in the form of various taxes and levies. It was estimated in 1994 that alcohol consumption in India was growing at a steady 15% per year (222). The advent of de-licensing and economic liberalisation has brought several multinational liquor giants into India and introduced a competitive atmosphere into the alcohol trade (223). There is now a growing concern in various parts of the country regarding the increase of alcohol consumption and alcohol-related problems. There have been major difficulties in the formulation of a comprehensive alcohol policy in a country such as India with its enormous size and diversity, complicated further by it being an unequal society with the gap between rich and poor growing steadily. In recent years many alcohol related policies have been adopted by the governments, both State and Central, without any public debate or adequate consultation with relevant and concerned professionals (223).

The past few years have witnessed wide fluctuations in the alcohol related policies of several State Governments. "Dry" laws have been mostly liberalised wherever they existed in the country, resulting in a shift in the focus of policies from prohibition and total abstinence to promotion of temperance. There is a new growing body of evidence to suggest that the harmful use of alcohol, with the consequent health and social problems associated with its abuse, has been steadily on the rise all over the country during the past three decades. India itself has been going through a period of rapid social change. The demographic profile of the country is in general transition, with increasing urbanization and fast-growing cities. While the size of middle socioeconomic classes has grown in both urban and rural areas, sections of the population such as the illiterate, unskilled workers, landless people in villages, and some slum-dwellers, have remained poor or even become poorer (206, 223).

SOCIAL CHANGES

India itself has been going through a period of rapid social change (206). The demographic profile of the country is in gradual transition with rapidly increasing urbanisation and fast-growing cities. The size of the middle classes has grown in both urban and rural areas; at the same time, certain sub-groups of population such as illiterate and unskilled workers, landless people in the villages and some of the slum dwellers in urban areas, have remained poor (and have actually become even poorer in some instances). The disposable income of the middle and upper classes has also been growing steadily. The country at present is witnessing major changes in its economic policies, with liberalisation of the market and the steady introduction of a market economy. Speath (224) of the *Wall Street Journal* commented that "*the traditional conservative Indian who believes in modesty and savings is gradually giving way to a new generation that thinks as freely as it spends".* The improvement of communication through satellite television, videocassette, direct versatile disc, etc., has contributed to the increasing integration of India within the "global village".

All of these factors are bringing about various changes such as the breaking up of the traditional joint family system in India, and are changing values and attitudes, including the attitude of many Indians towards the consumption of alcoholic beverages. The culture and religious controls that previously prevented people from drinking alcohol are weakening, especially in the North West and Southern part of India (217).

Among the upper and middle socioeconomic classes, alcohol drinking has been gaining respectability as a status symbol, and also as a symbol of embracing Westernisation. At the other end of the socio-economic spectrum, alcohol consumption may be the only leisure activity for many people. For a large number of poor people, alcohol may be initially a means of coping with deprivation, poverty and constant struggle to just survive within the harsh realities of their lives. Coupled with these factors is the easier availability of alcohol at any time of the day in most parts of the country. A noticeable trend in India is the increasing alcohol consumption by different groups who traditionally were abstainers, such as women, teenagers and rich people in the rural areas. It is more than likely that alcohol related health and social problems are on the rise in India, though their real magnitude is unknown.

Efforts of prohibition have failed repeatedly in the past and there is an urgent need for India to review its alcoholic policies centrally and also in all of its 25 States (213).

At present, India, despite a massive rise in alcohol production, remains a predominantly abstinent society on the whole. It is quite probable that India still consumes more homebrew alcohol than commercially produced alcoholic beverages, and some people believe that it is equal in volume to licit alcohol production, thereby doubling registered consumption. India appears to have undergone a sort of "*alcoholisation*" through indigenous efforts, without the influence of any significant acculturation processes, as has happened in some Asian countries such as Thailand, Japan and Korea (221). It is a licit as well as an illicit brewers' paradise, because of the existence of an enormous market due to the size of population.

PREVALENCE OF ALCOHOL CONSUMPTION AND ALCOHOLISM

General population studies conducted in different parts of the country, which have been detailed in a different chapter of this thesis, suggest current prevalence rates of drinking alcohol ranging between 23% and 74% among males. Women are normally non-drinkers and constitute 90% of the abstainers. However, in the tribal groups and tea plantation workers, a substantial number of women drinkers have been found, with prevalence rates ranging between 28% and 48%. It appears that India is likely to face a heavy burden of social and medical problems due to steadily increased alcohol consumption and its harmful use (206).

In their field survey of mental morbidity due to alcohol drinking, Surya et al (207) surveyed a population of 2,731 people from 510 households in Pondicherry, Southern India and found a rate of 3.6 per thousand for "alcoholism". Gopinath (208) surveyed a total population of a village near Bangalore and found 2.36 per thousand of the population to be suffering from "alcoholism". In another major epidemiological study of mental disorders supported by the Indian Council of Medical Research, Verghese et al (209) surveyed a stratified random sample of 539 families (with 2,904 respondents) in a semi-urban area, namely Vellore town in Tamil Nadu State of India. All suspected cases were assessed by a psychiatrist and diagnosis was made as per the definitions in I.C.D. - 8 (1965). The prevalence rate was 4.8 per thousand. Dube and Handa (210) surveyed a large population of around 29,000 in and around Agra in

North India and reported that 1.38% of the population habitually abused alcohol. Elnagar et al (211) reported a prevalence rate of 13 per thousand of "alcohol addiction" in a survey of a small rural community of 1,383 persons from 184 families in the State of West Bengal.

Premrajan (212) conducted a cross-cultural study in an urban area of Pondicherry in South India and found a prevalence of 34.1 per thousand for "alcohol dependence syndrome". When only adult males were considered, the prevalence rose to 66.2 per thousand. Grant (206) commented that, since most of the surveys used a two-stage design involving an initial screening for probable cases using instruments designed primarily to pick up mental disorders; it is likely that many persons with harmful use of alcohol were not identified during the screening procedure.

Singh (213), in a review of epidemiological studies of alcohol abuse in India, noted that, in spite of the large number of studies, it was difficult to generalize at a national level because of various methodological problems. Different methods of data collection, definition of terms, and categorization of alcohol consumers have been employed by different studies, making direct comparisons between studies difficult.

Studies on alcohol drinking in India since independence in 1947 are not numerous, mostly since 1970s, and mainly limited to certain States in the south, north and the north-west.

Gaunekar et al (225) in their study regarding the impact and patterns of "hazardous drinking" amongst male industrial workers in Goa, observed 234 subjects including 75 "hazardous drinkers", 78 casual drinkers and 81 abstinent workers. "Hazardous drinkers" had significantly poorer physical and mental health and showed trends of adverse social outcomes such as violence. Casual drinkers on the other hand were no different from the abstinent drinkers on any of the key outcomes. "Hazardous drinkers" drank mostly alone in bars, and preferred commercial alcoholic beverages which were cheaper and had a high alcohol concentration. In conclusion they found that "hazardous drinking" has a significant adverse impact on drinkers and their families. They also displayed unique drinking patterns, suggesting the role of stigma, and a preference for the higher alcohol content but cheaper drinks available in India.

The National Sample Survey (226) provided national estimates of regular tobacco and alcohol use in India and their association with gender, age and economic group.

It was conducted on a representative survey of 471,143 people over the age of 10 years in 1996. The national prevalence of regular use of smoking tobacco was estimated to be 16.2%, chewing tobacco 14%, and alcohol 4.5%. Men were 25.5% more likely than women to report regular smoking, 3.7 times more likely to regularly chew tobacco, and 9.7 times more likely to regularly use alcohol. Respondents belonging to scheduled castes (people who lower economic class of the society and employed mostly as servants, road cleaners, dustbin cleaners, etc.) and to tribes were significantly more likely to report regular use of alcohol as well as smoking and chewing tobacco. People from rural areas had higher rates compared to urban dwellers, as did those with no formal education. People below the poverty line were more likely to chew tobacco and drink alcohol compared to those above the poverty line. Comparisons were made between these results and those found in the United States and elsewhere, highlighting the need to address and to control these substances as part of a public health agenda.

Saxena et al in 2003 (227) published an article regarding the impact of alcohol use on poor families in Northern India. Two groups of families within the same community were interviewed by a trained research assistant using a semi-structured questionnaire. The groups were selected from the screening of successive households. The study highlighted some differences between heavy drinking and non-drinking families within the same community with respect to the adverse economic and health-related conditions. Their perception about the effects of alcohol on the family and health also differed. The findings suggested that there was a need to develop policies and programmes to alleviate harmful effect of alcohol problems in the community

Patel (228) commented about India in an article on meeting the mental health needs of developing countries, saying that alcoholism and drug addiction are emerging as serious public health concerns and given the magnitude of the problem, its implications on Indian society are enormous. Professionally managed and efficiently delivered programmes at the primary, secondary and tertiary levels are needed.

A community study of alcohol consumption in the Western India (209) assessed the prevalence and pattern of alcohol drinking in a middle-aged and elderly population in Mumbai, India in 2003. 50,220 men aged 45 years and over from the lower and lower middle section of the general population were interviewed. The results showed

that 18.8% were consuming alcoholic beverages, of whom 32.8% drank on at least six days per week. The most popular alcoholic drink was locally distilled products of fruits and grain (country liquor) and 75% of the consumers of country liquor would consume over 53 g of ethanol in a day when they drank, with 46.6% doing so on at least six days per week. The conclusion was their abstinence, and also heavy and frequent harmful use of alcohol, were common in that population and the latter was likely to have significant public health implications.

A community survey of alcohol drinking in Nepal (229) was carried out by Jhinan and others in the town of Dharan. The C.A.G.E. questionnaire was adapted for the Nepali language, and was administered to all adults in houses selected at random in the community. Altogether 2344 adults aged 15 to 60 were assessed and the prevalence of "alcohol dependence" was found to be 25.8%. The prevalence of alcohol dependence was found to be increased with age and peaked among 45 to 54 year olds, and was more than twice as common in men than in women. Alcohol dependence was also common among those with a lower level of education, widowers and divorcees and those belonging to the *Matwali* community. The extent of dependence was found to be influenced by the socio-cultural situation. The need to formulate a policy for substance abuse in the country has been addressed.

In a study in the year 2000 (230) evaluating the cost of alcohol dependence to the individual patient and the State, 113 male patients (mean age 38.37 years) diagnosed with "alcohol dependence syndrome" were assessed regarding: (i) income (ii) consumption of alcohol; (iii) amount spent on alcohol; (iv) financial loss due to sickness, unemployment and absenteeism; (v) amount spent by the individual on treatment for alcohol related problems; (vi) family structure; (vii) change in roles in the family, and (viii) social support. The results showed that often monthly alcohol expenditure was more than monthly earnings, which was reduced mainly due to absenteeism, sickness and unemployment. It was concluded that the social costs of "alcoholism" far outweighed the benefits accrued from the sale and taxation of alcohol.

The effect of drinking behaviour on the family situation was studied by Srivastava (231) who studied male members of 20 families. Each completed a questionnaire rating the variables of affection, family participation, economic factors, regard, anxiety and faith. The result was that their drinking behaviour affected all examined

variables. Those with a drinking habit were found to display little regard for other family members and did not co-operate with family matters.

In April 1998 an article was published by Prasad et al (232) regarding "alcohol dependence" in women as a preliminary profile examining drinking patterns, progression to dependence, and resultant medical complications including psychological factors in 10, 22 to 25 old female alcoholics in India. The preliminary profiles of these women seen at a de-addiction facility highlighted similarities and some salient cultural differences between the women in that sample and women in reports in Western literature. Differences included drinking for belief in its medicinal value during the postpartum period. The conclusion was that the strong interplay of genetic and environmental factors, psychological vulnerability, early psychiatric and medical problems, poor motivation to seek treatment and poor social supports made that group especially vulnerable, and highlighted the need for specially geared management strategies.

Gupta et al (233) conducted a survey of drug abuse among rickshaw pullers, belonging to lower socioeconomic class, in the industrial town of Ludhiana, Punjab, India. Their study of 250 rickshaw pullers revealed that 92% of respondents reported having used tobacco, 76% used alcohol, 60% tobacco users reported heavy use (daily), compared with 4% alcohol users, a plurality of whom (36.4%) indicated moderate use (i.e. weekly). 16% of respondents reported cannabis use, while 2.4% reported opium use. More than 50% of the respondents reported that the need to stay awake/alert, curiosity, and need to overcome boredom as the main motivation for drug use. Only 8.4% reported pleasure as motivation.

Chakravarty (234) investigated community workers' estimate of drinking and alcohol related problems in rural areas by interviewing 42 community workers aged 21+ years. 55% of subjects estimated that 26-50% of the males in the community were alcohol drinkers, most of whom were estimated to be literate. Problems related to alcohol use were dependency, family problems, physical problems and intoxication. More than 50% of subjects reported that they had never received any help for any of the listed harmful effect of alcohol. The concept of alcoholics among the subjects was that of a person with slurred speech and who behaves in an unruly manner.

Ponnudurai et al (235) in then Madras, India studied alcohol and drug abuse among internees by administering an alcohol and drug use questionnaire developed by the

World Health Organisation to 75 male and 41 female medical college and hospital interns. Results showed that 20 males used alcohol at least one a month. Cannabis was used by seven males and was the most commonly used drug followed by sedatives and tranquillisers. Nine females had used alcohol at least once and four had used sedatives and tranquillisers. 30 females and 10 males had never used alcohol or drugs. The most common reasons given for alcohol and drug use were to be sociable and for enjoyment, curiosity and also relief of psychological stress. Mostly friends were the main source of introduction to alcohol and drugs. Most subjects perceived that the personality of the drug users was equally ambitious and antisocial.

Mohan et al (236) studied alcohol abuse in a rural community in India and analysed the characteristics of 841 males and 313 alcohol users aged 15+ years. Approximately 50% of male and female users were between 20 to 39 years of age, 8.1% of males and 1.3% of females used alcohol daily or several times a week. Country liquor was a common beverage for 85% of subjects; 77.5% of males and 96.5% of females consumed less than one-quarter of a bottle of alcohol and 65.3% of males and 93.6% females were taking alcohol at their houses only. Most common reason given was pleasure, celebration of an event and as a status symbol. The quality/frequency index analysis showed that the percentage of alcoholics was 4.2 and the remaining subjects were social drinkers. Economic, physical and social problems were reported by a significantly higher percentage of "alcoholics" than social drinkers. The findings of the study were commanded to be given important consideration in formulating a strategy of policy in the field of alcohol use.

Alcohol drinking by *Rajput* people in Rajasthan, India was studied (237) through an ethnographical field study in the village of Khaalapur. It provided a description of alcohol consumption among *Rajputs* who are the members of a dominant military caste in Northern India. Data obtained regarding types of drinkers, alcohol consumed, contexts in which drinking occurs, and the culture motivations underlying different patterns of alcohol consumption. The association between drink and violence was also discussed.

Malhotra and Varma (238) in 1983 discussed the extent of alcohol and drug use in India. They commented that governmental and public concern with non-medical alcohol and drug use in India reflected in the expansion of survey literature. The

authors reviewed the literature on alcohol and drug use by the general population, students, youths and patients to illustrate the picture of drug abuse. They also presented a historical perspective of alcohol use in India.

Varma (239) studied the popular attitudes towards alcohol use and "alcoholism", administering verbally a structured questionnaire to 1031 subjects 18 years and older, comprising a random population sample to determine their attitude towards alcohol use. The result showed that 45% of the subjects felt people could not drink alcohol at all without adversely affecting their health and only 16.9% felt that it was not normal to drink at all. The non-users of alcohol had the most restrictive and current users the most permissive attitudes regarding alcohol drinking.

Mohan and Sharma (240) reviewed alcohol and alcohol problems in India. They commented that synthetic alcohol beverage production and consumption have increased in India and only few scientific studies undertaken. No consistent theme emerged from a review of the research policies of government funding agencies. Training programmes and treatment facilities are few and far between. Work on alcohol in the voluntary sector has a long history of focusing primarily on prohibition. Fortunately in the 1980s some positive steps were being considered, including a Working Group on Alcohol and Drugs and also the policy to develop Advanced Units.

A study by Dash (241) in Goa, India examined the prevalence and association of hazardous drinking in a male industrial worker population. A total of 984 subjects aged 20 to 60 years, from a randomly selected sample of 1013 workers from four industries of Goa, India were interviewed, which included the 10-item Alcohol Use Disorders Identification Test (A.U.D.I.T.) as an indication of " hazardous drinking" and the 12-item General Health Questionnaire as a measure of common mental disorders (C.M.D.s). The prevalence of "hazardous drinking" defined as an A.U.D.I.T. score of more than 8, was 21%. There was a significant association with C.M.D. Hazardous drinking was associated with severe health problems, such as head injuries and hospitalization, whereas C.M.D. was found to be a confounder in its association with adverse economic outcomes. The conclusion was that intervention in the work place should target both drinking problems and C.M.D.s, as they often co-exist and are associated with different types of adverse outcomes.

Nimagadda in 1999 (242) focussed on the social construction of the meanings associated with the use of alcohol and alcoholism from an Indian perspective.

Qualitative methods were used and the researcher collected ideas on the meanings of alcohol use from eight "alcohol dependent" subjects from a South India alcoholism treatment centre who participated in focus groups and in-depth interviews. The researcher considered the alcohol-dependent participants as experts who validated that point of view. On analysis several themes emerged: alcohol use is a symbol of economic status, caste, a person's karma, a period of turmoil, and gender privilege. The social workers and other intervention agents made themselves aware of the meaning of alcohol use for each "alcohol dependent" client so that they could plan creative and individualised interventions.

Chakravarty and Kaliappan (243) developed a scale of attitudes toward alcoholism based on a Likert method of summated ratings. A pool of 79 items was content validated by 10 experts for attitude and knowledge content and from this 57 validated items were analysed, selecting 28 items. The scale of attitude towards "alcoholism" has a split-half reliability correlation of 0.87. Criterion and construct validities were established for the scale.

Sinha and Sinha (244) reviewed the research literature concerning biological mediators of genetic propensities toward "alcoholism". Research papers reviewed and addressed included interaction among neurobiological and psychiatric markers and personality factors, ethnic factors, thiamine depletion tendencies also ethanol load and reactivity. The importance of those and other factors in the development of screening efforts was emphasized.

Sing and Sing (245) administered a questionnaire especially designed to obtain information about demographic characteristics and drug abuse, to 520 subjects aged 18-25 years. The drugs included alcohol, tobacco, cannabis, amphetamines, tranquillisers, sedatives, and opium. Amphetamines, cannabis, sedatives, and tranquilisers had been used by a smaller but significant proportion of subjects. Their findings indicated that the onset of abuse of drugs occurred mainly in the mid-teens and older subjects reported a higher current drug use than younger subjects, also more males than females reported using more types of drugs. However the use of sedatives and tranquillisers was found to be more common among females. A significantly higher prevalence of drug abuse was found among subjects living away from home.

DRINKING PATTERNS AND ATTITUDES

Throughout India, both in rural and urban settings, no significant normative patterns of drinking have yet emerged which could be reported validly at the national level. Though there has been a visible change in the pattern of drinking, and it has changed from being predominantly ritualistic and occasional to now being a part of routine social interaction and entertainment, the pattern is not same all over India.

In general, social drinking as it is known in the Western societies is not normally practised in India. The basic purpose of drinking alcohol is to get drunk as quickly as possible and to stay drunk as long as possible (213, 227). This motivation is normally reflected among those between 24 and 40 years of age seeking treatment for alcohol related problems. All over India, mainly in the Western and Southern parts, public bars and public houses are emerging gradually.

Unlike Asian countries like China and Japan, India essentially has never accepted alcohol as a part of normal social interaction and eating behaviour. Alcohol is also not consumed in a ritualistic way as a part of religious practice. As a result there is a virtual absence of any normative patterns and attitudes towards it. Dube (214) tried unsuccessfully to identify the cultural and ideological patterns of pluralistic Indian society as traditional (regional and local) and non-traditional: these categories are applicable to alcohol consumption patterns.

The traditional drinking pattern reflects mainly the tribal drinking of about 8.8% of the total Indian population who are scattered in the North East, the north central, and on several Southern islands. The Indian Government created special provisions and funding to bring them to mainstream but, more than sixty years after independence in 1947, the process is still incomplete. In Indian tribal culture, alcohol as a natural product has always been perceived to be gift of humankind and in turn was often offered to the nature gods and other sacred powers (217). One type of alcoholic drink, called "*mahua*", was discovered by tribal groups called *Bondo* and *Muria.* This was produced from the flower of the "*madhyaka*" *tree* and was offered to their supreme god "*Mahapravu*". Alcohol had also been equated with Mother Earth's milk on which they lived and fed; to the *Muria* tribe, drinking alcohol was both a duty and a pleasure (213).

Alcohol is also used as an antidote against sorcery, witchcraft and black magic by many tribal societies. It serves as protection against attack from enemies and also can be used to attack one's enemies, or to drive off spirits which are thought to bring different diseases. It is also used as a primitive substitute for modern legal documents: a word given on alcoholic drinks has the sanctity of a legal document.

Alcohol has also always played an important role in marriages. Beyond the formal social ceremonies, alcohol was served, generally to strengthen tribal social bonds. It is often a convention among tribal groups that no one, friend or foe, should decline any offer of alcohol. Alcohol had been used in the tribal "*panchayat*" (the village decision making body) to improve friendliness and ease potential friction. Among several Indian tribal people, including "*Chenchus, Yanadis, Pradhans, Gonds, Bhils, and Oraons*" in the northern part of India, alcohol plays a major role from the cradle to the grave (218).

Contact with people from the plains has traumatised tribal people in many ways. One important aspect has been the introduction of distilled beverages, even when they were legally prohibited. It is documented that the tribal groups in India have recently acquired the habit of consuming adulterated "*arrack*" (a kind of brandy) which has especially potent effects (213, 218).

Among the Hindu sect "*Tantrics*", *ritualistic* drinking patterns are found, and, along with drinking alcohol, all kinds of sensual indulgence are permitted and practised during the rituals. "*Tantric*" philosophy, at present, is known and practised in some Western countries, especially the U.S.A. The "*Shakti*" sect of Hinduism offers intoxicating drinks to worship their gods and goddesses, and the devotees also consume alcohol (181). These groups love drinking alcohol and believe strongly in magic, performed by the shamans to obtain their natural gains and control over the lives of others. Alcohol had always been considered as one of the various mind-altering substances that allow a priest or devotee to attain some level of consciousness so as to be able to cast magical spells. Fortunately these sects are on the fringes of Hindu religion; their followers have always been very few in number and have not had any opportunity to spread their beliefs and attitudes towards alcohol use among the larger population of Hindus.

So, while the availability of alcohol has increased in India since independence, no normal pattern of drinking has emerged at a national level. The basic purpose of

drinking alcohol for many Indians is still to get drunk as quickly as possible and to stay drunk for as long as possible.

In 1985, Mohan et al (240) carried out a study in centres in four different regions of India (East, North, South and Centre), covering both urban and rural areas, as well as specific occupational groups. The results showed that alcohol use was highest among industrial workers, tea plantation workers and tribal groups in comparison with the general population. The tribal groups showed a higher prevalence of alcohol use among women, reflecting norms of social acceptance. Choice of beverages also differed from region to region. Home brewed, low ethanol beverages (country liquor) were found to be popular among all tribal populations and in economically disadvantaged areas of Assam in Eastern India. Urban and rural workers mostly favoured factory-made spirits (including whisky, rum, brandy and locally made special liquors). The drinking scene in India is slowly was moving toward Western patterns of drinking in urban, but not rural, areas.

Alcohol drinking, like other behaviours, is learned by what psychologists term modelling and selective reinforcement behaviour. Drinking alcohol – both traditional and non-traditional - is a learnt behaviour, initially acquired by imitation of a model. A number of factors inform the behaviour. These include; degree of exposure to drinking situations, nuclear and extended family influences and the cultural and religious context which in turn informs awareness, knowledge, attitudes and beliefs (230).

ROLE OF FAMILY AND EXTENDED FAMILY

The family, especially the extended family concept, can play an important role in India in determining levels of alcohol consumption. In a study of college students, Mohan et al (240) showed a significant connection between family members' alcohol/tobacco habits and students' alcohol drinking patterns. Ahuja (246) identified that most students' first use of alcohol and drugs was primarily the result of peer group pressure; most drinking occurs at dances in the social groups of peers. Early adulthood is viewed as a time for fun, but there is also exceptional stress and susceptibility. In Northern India, the permitted open drinking of alcoholic beverages for fun and dancing are doubtless additional inducements for youths.

With the enormous industrialization that has occurred in India, the work culture has gradually become another important setting for the maladaptive learning behaviour of alcohol drinking. The work place and work processes often form a culture conducive to the use of alcohol and drugs. The nature of many jobs requires rural workers to move away from their traditional homes and live in cities and towns for long periods of time. Under these circumstances, pressure from colleagues, trade unions, and even supervisory staff, can facilitate drinking. The social image, as in Western societies, of alcohol being a "*fatigue reliever*" and the "*in thing to do*" during leisure time, affects every level of business, service, industry, and commerce. In present day India, this trend is slowly now even being adopted in the informal sectors and in the agriculture and cottage industries in the countryside.

ROLE OF CASTE AND CLASS

The role of both caste (though not as prevalent in India at present as in the past) and socioeconomic class (mostly poor and rich) in the functional use of alcohol in rituals and celebrations is increasing as alcohol becomes ever more integrated into the normal life style. In the study by Mohan (236), caste affiliation was observed to be a major influence in determining drinking patterns in the Rajasthan state of India.

Some negative consequences of increased alcohol production and consumption have also started to emerge in the areas of health, crime, disrupted social life, increased traffic accidents, and hospital emergency room records regarding overdose, suicide, alcohol, harmful effect of alcohol etc (224).

PREVALENCE AND PATTERNS OF ALCOHOL USE

No nationwide systematic epidemiological surveys have ever been conducted on alcohol use but a number of smaller studies have been completed in different States of India whose results are quite consistent on the whole. The available studies can be sorted into psychiatric surveys, general population drinking surveys and special population drinking surveys. Examples of some studies have already been mentioned earlier (247).

Psychiatric surveys

Many psychiatric morbidity surveys have been conducted on India's general population, and prevalence data for alcohol dependence have been obtained along with those for other mental disorders. In one study Surya et al (207) surveyed 510 households (2731 adult individuals) in Southern India and found the prevalence of alcoholism to be 3.6 per 1000. In another part of rural South India, Gopinath (248) reported a prevalence of 2.36 per 1000. Another study in the neighbouring State used a stratified random sample of about 2900 adult individuals and observed an I.C.D.8 diagnosis of "alcoholism" to be 4.8 per 1000 (209). Dube and Handa (210) found that 1.38% of the population they studied in North India habitually abused alcohol. A similar figure of 1.3% was reported in a smaller survey in the Eastern India by Elnagar (211).

The psychiatric surveys were carried out to find the prevalence of mental illness in general, and the screening procedures used were designed to detect only the most severe cases of "alcohol dependence". However, those studies have created an awareness of alcohol-related problems and paved the way for more focused research of alcohol use and abuse.

General population drinking surveys

Several general population studies have examined the prevalence and pattern of alcohol use in India. Deb and Jindal (202) found that 74.2% of adult men in rural Punjab have used alcohol at least once from among a sample of 1251 individuals. Mohan et al (249) in 1978 reported that 32.9% of all adults had used alcohol at least once during the past year. Lal and Singh (250) found that among 7000 people surveyed from rural Punjab, 25.6% of them drank alcohol, while the rate of drinking in males over 15 years of age was nearly 15%. Varma and Dang (251) questioned 1031 people from both rural and urban areas of Northern India and found 21.4% abused at least one drug, alcohol or cannabis. Another survey among rural general population, Mohan (252) in 1980 found that 58.3% of adult males drank alcohol, while only 1.5% adult females did so; probable dependence among male drinkers was 3.9%. In a methodologically sophisticated survey in Western India Sundaram et al (253) 24.7% of adult drank alcohol, males 36.1% and females 13.4%. Probable alcohol dependence rates were 3% (5.6% of males and 0.5% for females).

Mathrobotham (254) found in Sothern India 33% of males were current drinkers and the drinking prevalence was higher among those of lower socioeconomic class. Chakravarty (255) reported from Southern India that alcohol use to be from 26% to 50% among rural males, prevalence rate was higher among those who were illiterate. Ponnudurai et al (256) found problem drinking in a large city of Southern India and found a prevalence of 16.7% among males. Mohan (257) in 1992, using rapid survey techniques, reported substance abuse in urban areas of Delhi to be 26% and a majority of them abused alcohol.

Special population drinking surveys

Some studies have looked at alcohol use among students as special population. In another study Dube et al (210) among the university students ever having used alcohol was 32.6%. Varma and Dang (251) reported a similar prevalence of 31.6% of non-student youth. A large study by Mohan et al (258) of college students from seven Indian cities found that between 9.3% and 15.15% were current drinkers. The positive features of these multicentre collaborative studies were its methodological strengths and the consistency of the results across different cities. Mohan et al (259) in 1979 conducted one of the earlier studies and found that 12.2% of high school students were drinking.

There are no reliable data on drinking alcohol by industrial workers, but a study by Gangrade and Gupta (260) mentioned that 10% of the factory workers in Delhi regularly drank alcoholic beverages.

CONCLUSIONS

The findings of these various studies must be treated with caution because the samples are relatively small, they are regional rather than nationwide, and the operational criteria differ considerably. The studies generally agree that 60% or more adult population in India is abstinent. This contrasts markedly with more developed countries, where complete abstinence rates are much lower. A second important and consistent finding is the striking gender difference, where women showing drinking rates of fewer than 5% in most of the studies, compared to much higher rates for men (261).

Also, though no clear association of drinking with socio-economic categories are available nationwide in India, indication suggests that drinking alcohol may be more prevalent among the lower socioeconomic classes and poorly educated. Clinic data also suggest that more young people indulge in heavy drinking than before and "alcohol dependence" may be present among 1% to 2% of the adult population in India (261).

A major drawback of all studies on use and abuse of alcohol in India has been the absence of a consensus on what constitutes an "alcohol problem". Most researchers report only the frequency of alcohol use – "ever used", "occasional use", "use in past year", "recreational use", "current use", "daily use", - and/or quantity of use – "moderate drinking", "heavy drinking" and so on. There is lack of consistency in the definitions of these terms across studies. Some of the concepts, criteria, and thresholds for the application of criteria used in the diagnosis of "alcohol dependence syndrome" internationally are difficult to define, translate, and apply with ease across cultures and there is a need to focus attention on the uniform application of definitions of what constitutes an alcohol problem in the Indian context of future research (262).

As commented in a previous chapter, in a review of epidemiological studies of alcohol use and abuse in India (213) it was noted that though there has been large number of studies, it is difficult to generalize at a national level because of various methodological problems. Different methods of data collection, definition of terms, also categorizations of alcohol consumers are used in different studies. Some studies categorized the population as "current users" (used in the past 12 months), "ever used" (used in the past but not in previous 12 months) and "never used" (never used alcohol) (263). Some other researchers grouped the consumers as "normal drinkers", or as daily users, weekly users, monthly users, yearly users and lifetime ever users (264).

Research in the past three decades on the epidemiology of alcohol use in India shows that although abstainers from alcohol still constitute majority of the total population, there is widespread consumption amongst the male population and there is need for further research in the different States of India using sophisticated valid and reliable survey methodology (213).

In summary, therefore, there is a growing body of evidence to suggest that alcohol use, with its harmful effect for health and social problems associated with abuse, has been steadily rising all over India during the past two decades or more.

Rapid modernisation can often bring about various kinds of changes, including attitudes towards the consumption of alcohol. The cultural and religious controls that previously prevented Indians from drinking alcohol are weakening and, among the upper and middle classes, alcohol is gaining respectability as a status symbol and of a person's westernisation. Efforts at prohibition have failed miserably in the past and there is an urgent need for the country to review its alcohol policies (206).

The planning of this study arose out of a desire to explore and establish the extent and variations in drinking patterns of the three main religious groups (Hindus, Muslims and Sikhs) in India.

Thus, the primary aims of this study are:

1. To study the prevalence of alcohol drinking and alcohol dependence among adults in the three religious groups: Hindus, Muslims and Sikhs;
2. To establish whether there are any differences in drinking patterns within these three religious groups;
3. To compare the alcohol drinking habits and alcohol dependence of the three religious groups;
4. To compare the characteristics of alcohol drinkers and alcohol dependants in the three religious groups.

These aims were achieved by administering a study specific questionnaire to randomly selected subjects from these three religious groups (Hindus, Muslims and Sikhs) resident in the Eastern part of India (West Bengal State).

CHAPTER 3
CROSS-CULTURAL STUDIES ON ALCOHOL DRINKING

Present study is based on epidemiology of alcohol drinking and related problems among adults from three main religions groups of India, the Hindus, Muslims and Sikhs, from different cultural backgrounds. Few countries in the world have such an ancient and diverse culture as India. Stretching back in an unbroken sweep over 5000 years, India's culture has been enriched by successive waves of migration which were absorbed into the Indian way of life. It is the variety of cultures which is a special hallmark of India and its physical, religious and racial variety is as immense as its linguistic diversity. Underneath this diversity lies the continuity of Indian civilization and social structure from the very earliest times until the present day. Modern India presents a picture of cultural unity and diversity to which history provides no parallel. In this diverse culture variations in physical, climatic conditions and the extent of exposure to other cultures for many thousands of years have greatly influenced the tradition and culture of different regions. In view of this background a brief description of some cross-cultural studies of alcohol drinking may be appropriate

Alcohol is consumed in almost all cultures, each with its own particular pattern and choice of beverage. The perception of alcohol as being detrimental to health, the individual, society and culture lies not in the substance itself but in particular patterns of consumption, such as drinking to the point of drunkenness, addiction, or other harmful use.. In these circumstances, alcohol affects health negatively, may contribute to domestic and social problems, and in some cultures predisposes to violence, assault, rape, and even suicide. In all cultures in which alcohol is available, it can also (conversely) be used to enhance and sustain quality of life if consumption follows a responsible pattern. In old cultures, alcohol tended to be perceived as food, since the basic ingredients of alcohol are essentially agricultural food items: wheat, barley, rice, hops, fruits and even vegetables. A few cultures had no alcoholic beverages at all but were soon introduced to them through their contact with other groups. Different subcultures, people, and groups within nations and cultures have differing forms of alcohol production, distribution, and consumption; for this reason,

forms of alcohol use and consumption, or patterns of drinking, are as important an area of study as volume and quantity of consumption (265). This is particularly relevant to this study as several cultures and several languages exist in India.

The existence of alcohol abuse/excessive drinking/alcoholism (as it is variously called) presupposes the existence of normal drinking (i.e. norms in drinking and drinking custom). Normal use of alcohol has to be discussed before abnormal drinking patterns can be defined.

Alcohol has certain effects on both individuals and groups of individuals. Some of these effects seem to have value for the individual and/or for society, a conclusion buttressed by the observed fact that, as a custom, the drinking of alcoholic beverages has spread to almost all groups of men ever known, and has enjoyed a long life in almost every society of which we have knowledge. It is also equally clear that some of the effects of alcohol can be disadvantageous (266).

Norms differ widely from society to society, and even among ethnic subgroups within a society: what is considered abnormal could be normal for others. Drinking customs in some groups are accompanied by well-defined rituals, either specific to drinking or related to some other form of custom. Drinking alcohol may be restricted to some occasion, such as weddings, or to fiestas, as in Latin America; this is certainly true for some religious groups and tribal people in India.

Examples of different customs which accompany drinking can easily be cited almost indefinitely, as can examples of individual drinking behaviour which may fall within the norm of one group but not in another. As a consequence, various drinking pathologies have been developed. Jellinek (267) has described these pathologies as species of alcoholism and labelled them as "alpha", "beta", "gamma" and "theta" alcoholism. This classification has been disputed by various people, and Jellinek himself has admitted that at least one of them is not a syndrome. At any rate, they certainly represent different types of drinking pathologies or different forms of alcohol abuse. As an example, French alcoholics generally drink continuously throughout the day without reaching drunkenness, whereas 80% of male Chilean alcoholics drink in bouts with episodes of continuous drunkenness which often last more than a day (268).

Along with different patterns of between groups, psychotic manifestation as a consequence of alcohol abuse, differs as well (269). The authors have described a special type of psychosis which forms what they call a "bridge" between alcoholic hallucination and delirium tremens and which, they believe, is specific to the milieu of a certain class of man in Chile.

In seeking explanations of the causes of alcohol abuse, the individual's motivation has to be taken into consideration; this includes more than the recognised factors such as drinking to be sociable or to reduce anxiety/ tensions. The physiological and psychological effects of alcohol on human beings are not sufficient to explain the global variance in drinking pathologies across cultures, socio-cultural factors need to be taken into consideration regarding aetiology.

The management of alcohol induced pathology also differs from culture to culture. In Russia, where alcoholics are similar in characteristics to those of North America, treatment is primarily by conditioned reflex. The technique of creating aversion seems to be similar to that of other countries, but the approach is different. The authoritarian paternalistic attitude of the therapist is accepted by the Russian patients, for it is in keeping with cultural tradition of the country (270) but such attitudes probably would not be acceptable in the U.S.A.

Apart from alcohol affecting the individual, patterns of ingestion also have effects on groups and societies. These population, societal and cultural effects may be either beneficial or harmful and are likely to inform both the wide acceptance and related problems associated with alcohol ingestion.

Some of the outstanding effects of alcohol include the reduction of tension, guilt anxiety and frustration. It also can reduce a person's operational efficiency below the minimum necessary for social existence at all. In relation to the society, alcohol can detrimentally affect relationships and adversely impinge on normal social function and cohesion of family, local networks and work profile through adverse or socially unacceptable behaviour and cognitive impairment.

Western culture is now impinging on Eastern cultures through emerging economic affluence and trade with countries such as India, China, and Brazil, which have enormously increased the number and variety of goods and services they offer, including goods and services associated with the alcohol industry. Increased

affluence and related complexity has also resulted in mutual ignorance and loss of interest in social subgroups, in extreme inter-independence of subgroups and of individuals, in the emergence of money as being a controlling factor in human life, and also in an individualism marked by the increased power of each person and decreased power of such all-purpose, intimate groups as the family and small neighbourhoods (271). These changes in social complexity have had several profound effects in relationship to alcohol, and the way both individuals and society manages both the positive and negative aspects of alcohol consumption and its harmful use.

The rapid rate of change has practically eliminated functions of alcohol which are of minor importance in primitive societies, namely food value, medicinal value and religious ecstasy value. The immediacy of stress reduction and disinhibition are now in ascendance as significant characteristics of alcohol ingestion in terms of cultural significance. Alcohol is now accepted as a norm in many societal gatherings. This general acceptance in society has created a network of relationships, activities, wealth and social position revolving around the business and consumption of alcohol. As a consequence, society has had to develop contingencies designed to cater for the deleterious effects of excessive alcohol consumption. The nature of a complex society makes the social control of behaviour that is not strictly compartmentalized into one or another institution an extremely difficult task. The drinking of alcohol and its effect can infiltrate through all institutions and patterns of behaviour. Control of drinking behaviour in the complex society, is therefore a more difficult problem than in the simpler society.

From an individual's perspective, a complex society, in the absence of entrenched and stable familial networks, offers a formidable problem in terms of integration. The excessive use of alcohol can more rapidly and thoroughly destroy such participation in complex societies than it does in simpler, more general, and more intimate groups of primitive societies.

Accurate diagnosis and classification of alcohol-related problems due to its harmful use require that concise boundaries be specified between normal and abnormal drinking – whether the latter is called heavy, harmful, abusive, dependent, pathological or alcoholic drinking (272). Different people within the same culture have widely varying experiences with alcohol and very different ideas regarding

normal alcohol consumption. Consequently, the definition of 'normal' drinking remains a significant challenge when considering differing cultures.

Research on alcohol use in different cultures has been increasing and most of the early data about drinking patterns were collected mostly incidentally during the course of broader anthropological field studies (273) and the results provided useful data for later cross-cultural comparison.

Heath (274) has addressed the wide cross-cultural variation in societies' views of the consumption of alcoholic beverages. His work in Bolivia showed that behavioural patterns associated with drinking alcohol are integral features of that specific culture. His analysis has pointed out the importance of culture context in understanding the role of alcohol in different societies.

In relationship to social complexity and alcohol, Heath (274) commented on the function of alcohol in attaining religious ecstasy. In this context, alcohol must compete with fasting, purposefully induced exhaustion, self-laceration, drugs, and autohypnosis. In our highly specialized economic life there is small place for religious ecstasy. Moreover, the mental state achieved by alcohol intake has been considered for many generations as being ludicrous or disgusting rather than mysterious. Because most people are scornful of alcohol-induced spiritual experiences in current Western societies, this particular usage of alcohol has waned in popularity and prevalence.

Room et al (275) published a World Health Authority funded article on cross-cultural applicability diagnostic and assessment criteria relating to substance- use disorders so as to facilitate a meta-analysis of findings across studies. The cross-cultural applicability of substance use diagnostic criteria and the related instruments used for assessment were studied in nine countries. The qualitative and quantitative methods used in the study are described. English language equivalents of terms and concepts were found for all instrument items, diagnostic criteria and diagnoses and related concepts, despite there frequently being lack of direct translations from the original languages. Items regarding self-consciousness about feelings, and imputing casual relations, posed difficulties in several cultures. Single equivalent terms were lacking for some diagnostic criteria, and sometimes criteria were not readily differentiated from one another. The threshold for diagnosis used by clinicians often differed. In the majority of cultures, clinicians were more likely to make a diagnosis of

drug-dependence rather than of alcohol dependence, although the behavioural signs were similar. It was evident that the various cultural perspectives informed the differing definitions and assessment criteria.

Schmidt and Room (276) in 1999 mentioned that underlying cultural differences in the meaning of alcohol problems and dependence symptoms can lead people from different societies to systematically vary in their responses to a diagnostic interview, in ways that may be difficult for researchers to quantify or control. The authors described four different ways that cultures can vary in their accounts of dependence symptoms, potentially leading to problems with the cross-cultural applicability of diagnostic criteria. These include: (1) in terms of the thresholds of symptom severity or the point at which the respondents from different societies recognise a symptom of dependence as something serious; (2) in the problematisation of drinking related states – usually, symptoms of addiction are recognized across cultures; (3) in casual assumptions about how alcohol related problems arise; (4) in the extent to which there exist culture-specific manifestations of symptoms not adequately captured by official disease nomenclature.

In their study comparable data on the meaning of "alcohol dependence" criteria was collected from key informants in nine sites worldwide under the auspices of the W.H.O./N.H. Cross-Cultural Applicability Research Project. They used qualitative analysis to compare and contrast description of I.C.D.-10 dependence criteria across sites along the above four dimensions of cultural variations. Their conclusion was that the problems with the cultural applicability of international nomenclature warrant careful consideration in future comparative research on addiction, although comparisons of dependence made across some cultural boundaries are likely to be much more problematic than comparisons made across others. They also commented that the findings on dependence should be interpreted in light of what is known about the drinking cultures and norms of the societies involved. Any future diagnostic interview schedules should take into account a broad base of cultural experiences in conceptualizing "alcohol dependence", in developing criteria their related operationalization and diagnostic significance.

Gorence et al (277) reported validation of the Cross-Cultural Alcoholism Screening Test (C.C.A.S.T.) in 1999 and said that when screening instruments that are used in the assessment and diagnosis of alcoholism of individuals from different ethnicities,

some cultural variables based on norms and societal acceptance of drinking behaviour can play an important role in determining the outcome. They also said that the accepted diagnostic criteria of current market testing are based on western standards. In their study the Munich Alcoholism Test (31 items) was the base instrument applied to subjects from several Hispanic-American countries including Bolivia, Chile, Ecuador, Mexico and Peru. After the sample was submitted to several statistical procedures, the original 31 items were reduced to a culture-free test named the Cross-Cultural Alcohol Screening Test (C.C.A.S.T.). The results (based on a sample of n=2,107) empirically demonstrated that C.C.A.S.T. measures alcoholism with an adequate degree of accuracy when compared to other available cross-cultural tests. They concluded saying that C.C.A.S.T. is useful in the diagnosis of alcoholism in Spanish-speaking immigrants living in countries where English is spoken. They recommended use of C.C.A.S.T. in general hospitals, psychiatric wards, emergency services and police stations. Also, according to them this test can be useful for other professionals, such as psychological consultants, researchers, and those conducting expert appraisal.

Caetano et al in 1999 (278) published their study about the structure of D.C.M.-IV "alcohol dependence" in a treatment sample of Mexican and Mexican-American men to examine the symptom profile and factorial structure of D.C.M.-IV alcohol dependence. The subjects were interviewed in programme facilities by trained interviewers using a standardized questionnaire. The response rate was 95% in Mexico and 90% in the United States. The participants were 391 Mexican and 212 Mexican-American men in treatment for alcohol problems in Mexico and the United States. Dependence criteria were assessed with the Composite Diagnostic Interview-Substance Abuse Module (C.I.D.I.-S.A.M.). In their findings they mentioned that the unidimensional structure of alcohol dependence fitted the Mexican-American data but not the Mexican data. They concluded by saying that the test of unidimensionality must be seen as being inconclusive with regard to Mexican data and the result highlighted the potential influence that sample selection methods may have on study results, especially in cross-cultural projects.

Gureje et al in 1997 (279) in their publication of "Problems related to alcohol use: a cross-cultural perspective" commented on the assessment, diagnosis, and classification of mental disorder as being embedded in social and cultural norms and

said that in view of their Anglo-Saxon origins, the prevailing diagnostic criteria and instruments for their assessment have a strong Western influence despite being used in an international context with the implied assumption of their cross-cultural applicability. The W.H.O. Cross-Cultural Applicability Research (C.A.R.) study was designed to test this assumption in the context of disorders relating to the use of alcohol and drugs. This multi-disciplinary research project was conducted in nine countries having different patterns of drug and alcohol use. The results suggest that despite the existence of some similarities, substantial, important culturally determined differences do exist.

Helzer et al (280) in 1990 in their article "Alcoholism-North America and Asia: a comparison of population surveys with the Diagnostic Interview Schedule (D.I.S.)" commented that the D.I.S. is a highly structured instrument that enables lay examiners to gather the clinical information necessary to generate psychiatric disorders according to the D.S.M.-III, Feighner, and Research Diagnostic Criteria. It was developed originally as the diagnostic interview for the Epidemiological Catchment Area (E.C.A.) survey, because it adheres to D.S.M.-III defined alcohol abuse and addiction in D.I.S.-based population surveys cross-nationally (in St. Louis, Edmonton, Canada, Puerto Rico, Taipei City, Taiwan and South Korea). They found considerable variation in lifetime prevalence of "alcoholism", but a similarity in the age of onset the symptomatic expression, and the associated risk factors. They also found an inverse correlation between the prevalence of "alcoholism" and the strength of the association of the risk factors they have examined. They concluded by saying that the work they described demonstrates the utility of consistent definition and method in cross-cultural psychiatric research. The substantive findings have implications for the definition of alcoholism and for a better understanding of genetic and environmental interaction in its aetiology.

Hartka & Filmore in 1989 (281) published "Cross-cultural and cross-temporal explanations of drinking behaviour: contributions from epidemiology, life-span epidemiological psychology and the sociology of ageing". Their review reflects contributions made to the understanding of the historical and cultural variation in drinking practices from three disciplines; epidemiology, life-span developmental psychology and the sociology of ageing. It concludes that while these disciplines

have made major methodological contributions to the understanding of these variations, a unifying theory is lacking.

Robyak et al (282) compared drinking practices among black and white "alcoholics" and "alcoholics" of different personality types, selecting samples of 49 white and 49 black male alcoholics matched by age and education and classified into two personality types according to the M.M.P.I. scores. The result of analyses of variance yielded significant effects. White "alcoholics" reported a greater daily consumption of alcohol and were more likely to use alcohol for symptomatic relief of psychological distress, loss of motor control and had an increased tendency to engage in destructive behaviour. "Alcoholics" with psychiatric-appearing M.M.P.I. profiles reported greater social benefits of alcohol use and alcohol use for symptomatic relief of psychological distress. Results were discussed in terms of need to control confounding effects of biosocial variables in cross-cultural research and implications that these effects may have on the generalisability of "alcoholic personality typologies".

Calahan (283) discussed focussing primarily on the implications of quantitative, non-clinical studies of drinking practices and problems in planning primary prevention programmes. He explained how vastly different the survey findings are from studies of clinical "alcoholics" in terms of prevalence among various age and sub-cultural groups, and how longitudinal studies have raised questions relating to the predictive utility of the disease concept of "alcoholism". He has also drawn the attention to the importance of cross-cultural surveys, conducted at intervals, in achieving more success in primary prevention of many social, physical and psychological problems associated with excessive consumption of alcohol.

In a study (284) cross-culturally a British Questionnaire for Drinking Behaviour (H.D.B.Q.) to 96 Arab-Muslim alcoholics while receiving treatment in a Kuwait psychiatric hospital. Though H.D.B.Q. proved valid if differentiating Arab alcoholics drinking categories, it gave a significantly lower score for the Arab sample when compared to scores with a British sample. Statistical analysis of the responses of various categories showed that Arab patients tended to respond in absolute negatives significantly more than the British sample did. Cultural factors underlying this tendency were discussed. Suggestions are offered for improvements of this and similar diagnostic instruments to make them more trans-culturally stable.

Westermeyer (285) discussed cross-cultural aspects of "alcoholism" in the elderly and stated that little was known about "alcoholism" among the elderly in differing cultures. However, relevant reports suggest that certain trans-cultural commonalities. These include an inverse relationship between age and problem-producing drinking, increased risk of elderly alcoholics to trauma and the concentration of elderly "alcoholics" in cities. Certain other aspects of ageing may influence alcoholism in the elderly e.g. social status and the role of the elderly in the society including immigration or isolation etc. It is suggested that cultural norms and values, as well as social policy, ameliorate or exacerbate alcohol-related problems among the elderly.

Bennett (286) discussed the contributions from anthropology to the study of alcoholism and the role of the anthropologists and mentioned that a substantial number of anthropologists are conducting creative, productive and elective field studies relating to alcohol use, abuse and treatment. It is commented that certain themes characterizing the increase in research activities have been proposed including the multidisciplinary nature of many anthropological projects and cross-fertilization of research methods. The overview concludes with a recommendation to expand the role of anthropology in international cross-cultural studies of alcohol.

Heath (287) reviewed worldwide literature about women and alcohol, and found contradiction of many stereotypes, which raised new questions, interpretation and practical implications. It was commented that norms, values, attitudes, and expectations may be at least as important as physiological differences between sexes with respect to patterns of drinking and their outcomes. Women have been drinking as long as men have throughout history, and they drink about as often as men in many cultures. In a few instances, they even seem to drink more, in spite of the fact that the physical impact of a given dose of alcohol is greater for women. A cross-cultural perspective shows that too narrow a focus on the social, psychological, and physical problems relating to excessive drinking has severely hampered the understanding of women's diverse roles with respect to alcohol.

Studies relating to alcohol drinking and future diagnostic interview schedules should take into account a broad base of cultural experiences in conceptualising "alcohol dependence", in developing criteria and their operation and in informing the diagnostic significance of these. Changes in society, including increased complexity, affluence and westernisation of culture are a significant factor influencing the

relationship between alcohol and man. These changes are thought to enhance the use of alcohol and potential harmful effects. Social and cultural complexity has added new forces and motivations for the production and distribution of alcohol. Likewise, enhanced complexity and rapid rate of cultural evolution has diminished the power of agencies of control, limiting their efficacy. Accurate diagnosis and classification of alcohol-related problems require the specification of concise boundaries differentiating between normal and abnormal drinking – whether the latter is called heavy, harmful, abusive, dependent, pathological or alcoholic drinking. However, different people within the same culture have widely varying experiences with alcohol and very different ideas about what constitutes normal alcohol consumption. Attempts to distinguish normal and abnormal drinking across cultures is definitely more challenging (272, 288, 289).

Research on alcohol drinking in different societies and cultures has grown steadily. Most of the early data about drinking patterns were collected more or less incidentally during the course of anthropological field studies (290, 291).

An increasing number of studies have begun to focus specifically on the relationship between alcohol and culture (292, 293). Many of these studies have especially emphasized the importance of examining historic and contemporary experience with alcohol regarding cultural and historical background, in the understanding of current drinking beliefs and practices (294, 295, 296).

Comparative study of historic and contemporary experience with alcohol use and abuse can help to explain the stark contrast between 'wet' cultures, in which alcohol constitutes a highly valued aspect of social life, and 'dry' cultures, in which alcohol drinking is typically viewed as unacceptable and foreign to the normal way of life (297, 298).

Unfortunately, there has been a dearth of information about any cross-cultural studies of alcohol drinking and its harmful use in the sub-continent of India, Pakistan, Bangladesh, Sri-Lanka and the neighbouring South Asian countries.

CHAPTER 4
METHODS

STUDY DESIGN

A questionnaire based attitudinal survey was carried out in Greater Kolkata (old Calcutta), the capital city of the West Bengal State of Eastern India. Initially, a simple random sample of respondents was drawn from the population of the northern part of Greater Kolkata. However, this produced a cohort of respondents with too few members of the Sikh religion for comparison with other religious groups. As the primary aims of the survey were to both measure and compare the drinking behaviour of adults belonging to the three principal religious groups in the survey area, the initial sample was thus later augmented with a targeted stratified sample to provide sufficient respondents in all three religious groups for statistical comparison. The final survey cohort is thus best described as a sample of the residents of Greater Kolkata stratified by religious group (with random samples selected from reach stratum).

To complete the survey, the author visited the survey area once a year for three consecutive years. The first visit was to prepare the sample selection; the remaining two visits were to administer the survey questionnaire.

For the initial simple random sample, a complete list (sampling frame) of all adult residents in the selected survey areas was sought. In the U.K., random sampling is often achieved by the use of General Practitioner's lists, assuming that all residents in the U.K. are registered with a G.P (299). However, the situation is completely different in India, where most people do not have a registration with a General Practitioner. People have to pay for consultation and medication, and often seek medical advice from doctors who are the least expensive; this applies mostly to people from the middle and lower class.

Fortunately, being a democratic country, India has a regular census. So, in theory, the Electoral Registers provide complete lists of the electorate aged 18 and over. For this reason, these Registers were chosen as being a suitable sampling frame from which the sample could be drawn, although an obvious drawback with this

method was that the Electoral Registers exclude many of the electorate who have recently been enfranchised (primarily 18 to 20 year olds). This group of young people was considered to be particularly important in terms of their drinking behaviour so, in an attempt to rectify this deficiency, a supplementary sample of young persons aged 18 to 21 who were not registered as electors was also drawn up. Individuals obtained from this supplementary sample were added to those of the same age group on the Electoral Registers, so that a correct proportion of younger people would be drawn.

This supplementation method initially involved listing all the names of the electors on the Register at addresses where individuals had been selected for interview in the main sample. All selected individuals who were found to be a Head of Household were asked prior to interview to provide a list of all members of their household. Any person aged 18 to 21 years named on these lists but who were not on the Electoral Register were added to the survey sample and were interviewed. This method was successfully used by Dight (300) in his survey of Scottish drinking habits. A total of 21 young persons who had been omitted from the Registers were identified.

For the main sample, a systematic sample of every third household was selected from the Electoral Registers covering the survey area. For the second (supplementary sample), sample one in three adults from Sikh religious group was selected for the study, as they could be clearly identified by their names.

SURVEY AREA AND POPULATION

The population of Kolkata at the time of this survey (2008) was estimated to be 7,780,000, covering a geographical area of approximately 185 km^2. The survey was conducted mostly in the northern part of Kolkata in the areas of Shambazar, Paikpara, Cossipure, Sinthee, Baranagore, Alambazar and Dakhineswar, which have a combined population density of 9,920/km^2. The predominant religious faiths of the population of the survey are Hindu, Muslim and Sikh; other religions are Christian, Jain and Buddhist, but these constitute a very small minority of around 2% (301, 302).

Altogether 652 subjects were interviewed from 246 households, of whom 622 subjects belonged to Hindu, Muslim and Sikh groups; the remaining 30 subjects were

from other religious groups and excluded from the analyses presented in this dissertation (see Results Chapter for details).

QUESTIONNAIRE DESIGN

The survey was conducted by administering a questionnaire to all respondents who consented to take part. In this section, the issues around conducting a survey in the context of alcohol use are explored. The methods used to design this survey questionnaire are then described.

ISSUES

The concept of a single core syndrome of alcohol dependence arranged over a continuum of severity has generated debate for a long time (303, 304, 305, 306, 307, 308). Edwards and Gross (309) found some of these to be only weakly related to each other. Regarding screening instruments, health programmes have placed considerable importance on screening as an important primary and secondary prevention for several reasons, including the following (310).

- alcohol-related problems are prevalent in many communities around the world
- at-risk consumption of alcohol is associated with serious health and social problems
- effective forms of intervention are variable
- valid, cost-effective forms of screening are available.

Traditionally, the purpose of screening has been defined as case detection/ identification (311). The alcohol screening literature focuses predominantly on disease detection and usually does not always address the equally important issue of risk detection.

Earlier reviews (312, 313, 314, 315) have noted that bias in surveys may occur for many reasons, the most common being:

- Sample frame defects - the validity of a survey may be compromised if it either misses or inadequately samples the target population (316).

- Selective sampling, which could result in deliberate under-reporting of alcohol consumption, mainly because of the stigma associated with excessive alcohol use and its behavioural effects (317, 318). Wilson (319) argued that under-reporting would occur when respondents did not wish other household members to overhear self-descriptions of drinking practices. Under-reporting may also occur when inappropriate questions are employed (320, 321).
- Non-response by heavy drinkers as they are not only harder to locate but are also more likely to refuse an interview (322, 323). However, the evidence is not entirely conclusive. Some surveys have found that non-participants had higher rates of alcohol-related morbidity and mortality in particular and of diseases, injuries and illnesses in general, and were more likely to be unmarried or divorced as well as poorer than participants (324, 325).
- Poor/inaccurate recall varies with the drinking measure employed. Room (326) has reported, along with other researchers, telescoping of the timings of relatively infrequently drinking events. Several studies have estimated memory loss for the week prior to interview by comparing recall levels for the previous day with responses for the remaining days of the week. These analyses are based upon the assumption that there is total recall for the day prior to the interview, and that any reductions found on the remaining days are largely the result of memory loss (319).

Current approaches to research on alcohol-related problems are broad and interdisciplinary. The main area of alcohol research, however, draws upon epidemiological data with a primary focus on sociology, ethnography and economics, but with attention also given to the measurement of consumption and on indicators of alcohol-related problems. These problems range from somatic manifestations to socio-cultural pathology and economic costs. However, levels of alcohol consumption are often used as the primary measurement tool. The measurement of alcohol consumption must be designed in such a way that specific patterns can be separated from a broad measure of consumption. Much attention has been paid to how changes in level of consumption affect the incidence and prevalence of alcohol related problems.

In general, studies have mostly relied on measurements of quantity and frequency (327). While this approach has been a source of valuable information, it also has

been criticized for not being always accurate. Uni-dimensional measurement of quantity, for instance, are inappropriate for many purposes, such as differentiating between drinkers who are 'moderate in amount, steady in frequency' and drinkers who are 'heavy in amount and occasional in frequency' (328). While both groups may consume the same amount over a given period of time, the pattern of former may be one of daily consumption, while the later may confine all drinking to a single day or to the weekend. Most adverse consequences of drinking are closely related to heavy drinking (329), so it is important to be able to make these distinctions; information provided by volume alone may not be sufficient.

There is also little consensus on a standardised definition of the basic research tool, namely the units by which consumption is measured (330). The problem of defining a standard drink is compounded by a number of factors; it is also necessary to take into account cultural preferences for grams versus ounces of ethanol, American versus British fluid ounces, and measures of alcohol content as a percentage by weight or by volume. While a number of governments around the world have attempted to define the concept of a standard drink, these definitions cover a broad range, from the equivalent of 8 grams of ethanol in the U.K. (331), the equivalent of 10 grams of ethanol in Australia (332), through to the equivalent of 19.75 grams of ethanol in a Japanese standard drink (333). Research from different countries must therefore be standardised if valid comparisons are to be made. A little-heeded plea has been made for universal reporting in grams of ethanol or in metric fluid volume units, as commented by Miller (334).

In situations where levels of alcohol consumption are related to levels of harm, the issue of what constitutes a 'drink unit' becomes even more complicated. It is difficult to draw comparisons between epidemiological studies, especially at the international level, when a drink unit in one country can be equivalent to more than two drink units in another country. The development of a standardised unit that could be used internationally would make comparison possible.

The standardisation of measurement is particularly problematic in research that relies on self-reporting by individuals. Stockwell and Sterling (335) have shown that most people are unable to estimate the size of a drink accurately. In addition, there is particular difficulty in estimating the strength of low-alcohol or extra-strong drinks. The deviation is highest for distilled spirits and lowest for wine (336). Questionnaires

therefore need to be designed in a way that takes this variation into account. It has been reported that most subjects typically underestimate the amount (number of alcohol units) they drink (337).

In addition to the problem of correctly estimating the amount of alcohol consumed, self-report data is limited by the ability and/or willingness of responders to recall their alcohol consumption accurately (338). The problems inherent in self-report data are further underscored by the finding that such data generally generates lower estimates of total consumption than data derived from sales (339).

To ensure higher reliability of self-report data, the design of criteria and questionnaire items should ensure that the answers obtained truly reflect the desired information. Questions about quantity and frequency must be worded in a clear and unambiguous way. In some cases, response validity can be improved by asking multiple questions in a given survey regarding the same behaviours (cross-checking) or, where possible, the size of sample used in the survey can be increased. These modifications probably will not guarantee the reliability of self-report data, but can nonetheless improve upon it.

Another problem with self-report questionnaires is the measurement of drinking frequency. One strategy that could overcome these problems has been suggested by Room (326). This approach focuses on the most recent drinking occasions or days on which alcohol was consumed (drinking days). This has the advantages of providing information about both pattern and context and of revealing information on the drinking patterns of subjects who drink infrequently. Questions are included about quantity consumed, beverage type, length of drinking, occasion, setting and places of drinking.

Valuable information about problems can be obtained by questions relating to drinking type (340). Starting the day with a drink or a preference for drinking alone, for example, are both indicators of heavy or problem drinkers (341, 342). One example of such a comprehensive approach is that employed in a study that used three measurement concepts: problem drinking, consumption, and style (343). Problem drinking assesses the intensity of the problem, taking into account the self-perception of the drinker and family drinking history. Consumption measures quantity, frequency and the type of beverage consumed. Style assesses when,

where, and with whom the respondents drink. The combination of these variables allows a picture to be formed that takes pattern into consideration.

Many people who are not concerned with alcoholism believe that it is impossible to get reliable information about drinking patterns. The reasons given are (a) self-deception and guilt on the part of the alcoholic; (b) the difficulty in many cases of heavy drinker to assess intake; (c) the failure of researchers to take an adequate drinking history. Even so, 80% of alcoholics give a drinking history which tallies with that from other sources; if quantities are accepted as approximations, valuable information can be obtained (344).

Most large North American surveys of the 1990s and afterwards included at least 10 items to measure alcohol-related harm (e.g. U.S. National Alcohol Surveys in 1990 and 1995, Canadian General Social Survey in 1993, Canada's Alcohol and Drug Survey in 1994 and the Warning Label Surveys over the period 1990 – 1994). A survey questionnaire by Rehm and others (345) consisted of items about lifetime and last 12 month prevalence in five areas of harm: friendship and social life; physical health; home life or marriage; work, studies and employment; financial situation. These items were derived from more complex questionnaires about drinking practices used in U.S. surveys of the 1960s and 1970s (346) and were adapted from a larger series described by Hilton (347).

"Alcoholism" questionnaires have the disadvantage that they depend on honest replies from an individual who may be unwilling to admit to social problems and offending history including police convictions. They lack the inherent subtlety of the medical interview, and the self-administered versions are dependent on respondents being well enough and sufficiently motivated to complete them. By concentrating on social problems and symptoms of harmful use of alcohol, they tend to encourage a narrow concept of alcoholism. Respondents with physical diseases caused by alcohol may never have suffered any of the social consequences of heavy drinking nor have been dependent on alcohol. Indeed, their drinking habits may have been regarded as socially quite acceptable, so such respondents will be missed by this type of questionnaire. Several questionnaires have been developed for the diagnosis of alcoholism, of which the Michigan Alcoholism Screening Test (M.A.S.T.) and the 'C.A.G.E.' questionnaire have both withstood the test of time (344).

THE QUESTIONNAIRE

Most questionnaires are based on the classical questionnaire on drinking habits and effects developed by Jellinek (267). However, they vary considerably in a number of ways, for example:

1. The average time taken for completion;
2. Whether the questions only ask about drink, or include other topics to disguise the true purpose of the questionnaire;
3. The identity of the person who fills in the answers - informant or interviewer;
4. How structured or open are the items on the questionnaire;
5. Whether questions are asked about the family of the informant;
6. The actual type of question asked about drinking.

The completion time factor is of paramount importance when a questionnaire is being administered; this depends primarily on the number of questions asked, their length and ease of understanding and the type of response required. The average time of completion of such direct interview questionnaires has been variously reported to be three and half hours (348), one hour (349, 350), 40 minutes (351), 15 to 17 minutes (352) and 7 to 8 minutes (299). In the survey reported in this dissertation, it took 25 minutes on average to complete the questionnaire, even when the questions had to be translated into *Hindi, Bengali* and *Urdu* languages. People who spoke in Hindustani languages could also speak in Hindi language which was mostly similar and majority of respondents spoke in Bengali Language, even people from other States of India. With subjects from a higher socioeconomic class and education, background translation was not required.

The C.A.G.E. questionnaire (344) was developed in the 1970s as a short interviewer-administered test to screen for alcoholism or cover drinking problems. C.A.G.E. is an acronym referring to four questions pertaining to the lifetime drinking experience of the drinker:

Cut: "Have you ever felt you ought to cut down your drinking?"

Annoyed: "Have people annoyed you by criticising your drinking?"

Guilty: "Have you ever felt bad or guilty about your drinking?"

Eye-opener: "Have you ever had a drink first thing in the morning to steady your nerves or to get rid of a hangover?"

Two or more positive answers to these questions are usually taken as an indication of "alcoholism" or covert drinking problems. The advantage of the C.A.G.E. over similar scales, such as the short Michigan Alcoholism Screening Test (353), the Severity of Alcohol Dependence Questionnaire (354), and the D.S.M.-IV subscales (355) are its concise and inexpensive format, its simplicity of scoring and the non-incriminating nature of the questions. A majority of studies (356, 357, 358) have confirmed its validity as a screening instrument for "alcoholism" in clinical settings, though some (359, 360) have concluded the opposite. In recent years, the C.A.G.E. questionnaire has been used in a number of surveys as an instrument to estimate the prevalence of problem drinkers in the general population (361, 362, 363, 364, 365). In an earlier study in Manchester and Liverpool the author had used the C.A.G.E. questionnaire (14). It has also been used by Jhinan (229) in an epidemiological study in Nepal. The Michigan Alcoholism Screening Test and its shortened versions are discussed later in this chapter.

There were three parts to the questionnaire used in this study. The first part elicited demographic details of the subjects interviewed: religion, religious practice, occupation, marital status, family structure, education, residential unit, place of residence and length of stay at the residence.

The second part contained questions on family drinking, embedded amongst other questions concerning eating, smoking, gambling and leisure activities. There were also questions on attitudes towards alcohol drinking.

The third part of the questionnaire involved questions relevant only for those subjects who drank alcohol, including quantity-frequency of drinking, place and type of drinking, history of taking addictive drugs and a Brief M.A.S.T. Questionnaire to detect "alcoholism". The questionnaire also included some items on attitudes about alcohol drinking. All questions on alcohol drinking were embedded among other questions on health, smoking, leisure activities and also money spent on entertainment.

A copy of the questionnaire is attached at the end of this chapter.

METHODOLOGICAL ISSUES

Reporting bias

Plant and Miler (366) compared these two types of questionnaires and concluded that surveys based on self-reports of drinking habits are likely to produce an underestimate of consumption patterns. In order to investigate whether some approaches produce more accurate results than others, a disguised interview schedule, presented as part of a health and leisure survey, was compared with an undisguised schedule presented as being a survey of smoking and drinking habits. The result indicated that there was little advantage in disguising a survey as a health and leisure investigation; although the disguised schedule produced a significantly higher mean reported alcohol consumption than the undisguised schedule in the working class areas surveyed, but not in the middle class areas.

Sample surveys are the main method used to obtain data on community drinking habits. However, those respondents who are, in fact, the heaviest drinkers appear to be especially likely to under-report their alcohol consumption during such surveys (367). Data collected in this way is, accordingly, likely to be biased to give a distorted impression (368, 369).

It is possible that some types of interview schedule and method of presentation may be more successful than others in eliciting honest information about drinking patterns. The World Health Organization (368) states that: "*For reasons which hardly need to be mentioned, any survey on drinking should be part of a broader survey.... Surveys on means of relaxation, on mode of living etc may be delivered to yield the required information on drinking habits. The principle is to avoid singling out of drinking as a subject in inquiry*". The W.H.O. Report suggested that an undisguised survey of drinking habits might inhibit people from giving an accurate account of their alcohol consumption, especially if they were heavy drinkers.

Gordon (369) also suggested that an indirect approach would be preferable to a direct one, and recommended the use of a combined nutritional and alcohol survey. Wilkins (299) commented that the reason for using an indirect survey is the known tendency of alcoholics to deny their symptoms. The hope is that a disguised questionnaire, involving questions on drinking alcohol embedded amongst other ("dummy items") relating to a variety of related and unrelated topics, may improve the validity of the responses to the alcohol-related items. However, the disadvantage of a disguised approach may be the necessity to include such superfluous questions, as

this can substantially increase the length of the questionnaire and diminish (proportionally) the number of relevant questions. Wilkins also commented that most American surveys of alcoholism have adopted an undisguised approach whereas in the U.K. most interview surveys have used disguised questionnaires.

Edwards et al. (370), on the basis of three pilot interview surveys which included both normal drinkers and some previously identified alcoholics, concluded that there was no advantage in disguising a drinking behaviour survey as a health investigation and recommended a direct and simple statement as to the purpose of the research, as being the best strategy for achieving a high response rate.

In this study, a disguised approach was thought to be most appropriate. The Community Leaders and General Practitioners in the survey area were supportive of this decision, the majority indicating that direct questioning about alcohol drinking would probably have a negative impact, especially from some religious groups. The author, being unknown to the subjects and coming from the U.K., was advised by his colleagues and other advisers to approach the community leaders and/or family doctors to persuade subjects to be interviewed. For that purpose the author had to arrange several meeting with them in the survey area, for explanation and clarification of the purpose of the survey.

The author's impression was that describing the interview as being a "health and leisure survey" encouraged the subjects to be more co-operative, which helped to form a rapport at the start of the questionnaire before more sensitive questions regarding alcohol drinking were encountered. This technique resulted in a low refusal rate and was welcomed by the doctors and community leaders when they were approached with the names of the subjects who had been (randomly) selected. Most of them also pointed out that they would have been very reluctant to allow me to approach the subjects directly only about alcohol-related questions, especially to people that belonged to certain religious groups mainly Muslim.

Non-response

In any survey there is concern over the level of non-response i.e. those people who either refuse to take part in the survey or who cannot be contacted. The author was particularly concerned that the subject matter of the survey might lead to a high

refusal rate, so the decision was taken to take a disguised approach by describing this survey as a "health and leisure survey". The author, being a medical practitioner practising in the U.K., helped to a great extent in convincing respondents to be interviewed. Local community leaders and general practitioners known to the subjects also helped to explain the survey to the selected subjects with the author. That proved extremely useful for the author to form an initial rapport and in reduction of anxiety of the subjects before the sensitive questions on alcohol drinking could be asked.

The subjects who refused to be interviewed were predominantly Heads of Households. Before being classified as "*non-contacts*", individuals were approached twice to agree to be interviewed. "*Non-contacts*" were replaced by newly-drawn names. Target subjects who had either moved away from home, or who had died, plus those whose homes had been demolished, were also replaced by new randomly drawn names. Persons who were deaf, too old or infirm, or unable to understand the questions were also counted as "*non-contacts*".

'Quantity-frequency' questions

Combined quantity-frequency measures of drinking alcohol have been used in many general population surveys and have now a long history in alcohol studies, since Straus & Bacon pioneered the Q-F index (371). The measures draw on one or both of two basic rationales:

1. An overall summarization of drinking behaviour, often into "heavy, moderate, light and occasional" categories.
2. A summarization which preserves a distinction between quantity and frequency dimensions.

Many of the measures combine the two principles. Room (372), commenting on quantity-frequency of drinking, said that the maximum quantity of drinking obviously does not lend itself easily to estimating overall volume of drinking, and neither does it indicate the frequency of heavy drinking, but it does indicate whether a respondent ever drinks to levels which put him at risk of intoxication and elevate his risk of social and other consequences of drinking.

In this study, the subjects were asked how much and how often they drank alcohol and were offered the following alternatives: (a) never, (b) ever, (c) how much and how often last week, (d) if not last week, last month or (e) last six months.

Alcohol consumption categories

The categories of drinking alcohol were: occasional drinkers, light drinkers, moderate drinkers, heavy drinkers and "alcohol-dependents/alcoholics". The light, moderate and heavy drinking categories were adopted from Wilkins' study (299) in Manchester, UK in which subjects were graded according to their last week's consumption of alcoholic drink, as follows:

Light drinkers: 1 to 10 units last week for men and 1 to 5 units for women.

Moderate drinkers: 11 to 50 units last week for men and 6 to 35 units for women.

Heavy drinkers: Over 50 units last week for men and over 35 units for women

In this study people who did not drink last week but drank 1 to 10 units for men and 1 to 5 units for women per week on average in the last month were also classified as light drinkers. Subjects who drank less were classed as occasional drinkers. People who did not drink last month but drank infrequently in the last six months averaging less than the light drinkers category were also classed as occasional drinkers.

"Alcoholics" were classed as those who scored more than five points when screened using the Brief Michigan Alcoholism Screening Test (Brief M.A.S.T.).

Measurement of drinking behaviours

In many studies on alcohol drinking (373, 374) people have been categorized depending on their last week's drinking. The aim of this study was to obtain, as far as possible, detailed information on drinking habits relating not only to the amount of alcohol consumed but also to such things as the types of beverage drunk, places of drinking, company with whom alcoholic drinks were usually taken etc.

There are two ways in which this type of data can be collected. Informants can be asked to generalize about their 'typical', 'normal' or 'average' drinking behaviour - or they can be asked to recall their actual drinking occasions over a fairly short period of

time. With the latter method, the specific time period is treated as a representative sample of their drinking behaviour (300).

The author, therefore, based his information on drinking behaviour on last week's (the week prior to the day of interview) drinking in which details of every drinking occasion were recorded. The main advantage of gathering data by this method are as follows:-

1. Information is based on a factual record of a week's drinking rather than on an informant's judgements of what constitutes typical drinking behaviour. It has been shown that the informants are not generally capable of giving reliable and unbiased answers about their own average, typical or normal drinking behaviour. This bias is compounded when there is a conscious or an unconscious motive to minimise or exaggerate drinking behaviour. It was therefore decided that a measure based on a detailed factual record would be more reliable and less prone to bias.

2. On a more practical note it is much easier for the subjects to recall details of events that actually occurred last week, rather than to generalize about such things as the company in which the drinks are usually taken, the places involved, the frequency or quantity in which all types of beverages were consumed, etc.

3. More detailed analyses can be carried out using a factual record of drinking occasions since it was possible to relate two or more aspects at the same time e.g. the number of drinking occasions which took place in different places.

4. Only those who drank at all in the last week were asked for details of where and what they drank, so that the majority of informants who drank only a little were relieved of the burden of answering a considerable number of questions which were only marginally relevant to them.

Dight (300) commented on some disadvantages of using "last week's" drinking as a typical week's drinking and questioned the validity of taking this as a measure of a typical weeks' drinking. She said that some informants may not have regular drinking habits and that spells of heavy drinking could be separated by periods of regular abstinence. However, evidence from other studies suggests that heavy, infrequent drinkers are relatively rare. It is likely, however, that there may be misclassification of

those who only drink a little since it could be a matter of chance whether or not they happened to drink "last week". However a certain haziness about the dividing line between very light, regular and occasiona drinkers does not seem to be too serious.

Wilson (319) in his article on improving the methodology of drinking surveys commented that recent years have witnessed a growing international concern with problem of alcohol abuse. Interest has broadened beyond the traditional problem of alcoholism, to include drunkenness offences and the increased risk of industrial or road accidents associated with drinking alcohol.

The Michigan Alcoholism Screening Test (M.A.S.T.)

The Michigan Alcoholism Screening Test (M.A.S.T.) was devised to provide a consistent, quantifiable, structured interview instrument to detect "alcoholism". It consists of 25 questions that can be rapidly administered. Five groups were given the M.A.S.T.: hospitalised alcoholics, a control group, persons convicted of drunk driving, persons convicted of drunk and disorderly behaviour, and drivers whose licenses were under review. The validity of M.A.S.T. was assessed by searching the records of legal, social, and medical agencies and reviewing the subjects' driving and criminal records. The M.A.S.T. responses of 15 subjects who were found to be alcoholic in the record search were analysed to determine where the screening failures had occurred. Recommendations were made for reducing the number of such false negatives (375).

Moore (376) administered the M.A.S.T. to 400 adult psychiatric patients to test its discriminating capacity between alcoholic and non-alcoholic patients. 30% of total population, of whom 50% were men and 22% were women, scored in the alcoholic range, and 128 were diagnosed as problem drinkers.

Margruder-Habib et al (377) studied the association between M.A.S.T. and a clinician's judgement in 369 hospitalised alcoholic patients. The results indicated that 77% of the total cases were identified as having alcohol-related problems. Brady et al (378) reported that M.A.S.T. could be clinically used for individual patients both for diagnosis and as measure of providing a short comprehensive profile of the medical, psychological and social functions that are often affected by the presence of alcoholism.

In India, an attempt was made to translate the English version of M.A.S.T. into the Tamil language for 'appropriateness to the clinical population' (379). Altogether 150 hospitalised alcoholics were given both English and Tamil version of M.A.S.T. Results revealed that all the items were appropriate to the clinical population. The internal-consistency reliability was found to be high (r = 0.71). The test-retest reliability of the test was 0.80, which suggested that the Tamil version of M.A.S.T. can be used as an effective instrument to detect the presence of alcoholism in this population.

CONDUCTION OF SURVEY

Most subjects were interviewed at their homes (total 500 = 80.3%) after selecting their names at random (one in three) from the Electoral Register, and were aged 18 or over. The subjects were mostly contacted through their local General Practitioner, indicating that it was primarily a health survey and alcohol drinking was a part of it.

From the author's previous experience of surveys of alcohol drinking in India (16) it became obvious that asking questions directly about alcohol drinking might discourage people from participation in the survey. This issue was discussed with the General Practitioners and Community Leaders and all of them agreed on the fact that the response would be poor if direct questioning was regarding alcohol drinking. It was also commented on by them that it would be very difficult for Muslims to agree to comply with an interview regarding their alcohol drinking.

Unlike the U.K., people in India are not registered with a General Practitioner. People on a low income quite often cannot afford financially to consult qualified medical practitioners when they become ill and prefer to consult homeopathic and ethnic (*Kaviraj, Hakim*) non-medically qualified therapists about their illness, except when the illnesses become serious. Most of these doctors have some kind of formal training in alternative medicine. Homeopathic medical schools exist all over India and are very popular. "*Kaviraj*" doctors deal with different herbal medicines and there are *"kaviraji"* medical schools for their training. There are also *Hakim* (non-qualified Muslim therapists who normally use indigenous herbs and other medications) practitioners dealing with illness; these are consulted mostly by Muslims. "*Kaviraj*"

and *Hakim* type of non-medically qualified practitioners are also found in the U.K. and are sometimes used by people of Asian origin.

It was felt by the author that, for subjects not known personally by a local doctor, approaching their community leaders would be the best way forward, rather than approaching them directly. People normally listen to such leaders and follow their advice for their family problems and other issues. The author was able to speak to the community leaders in their local languages *(Bengali*, *Hindi*, and *Hindustani*) and was able to translate the questionnaire to them when required. All subjects gave verbal consent to the doctors and community leaders and were then contacted by the author directly. Altogether 43 people did not agree to be interviewed and 12 males withdrew after giving consent.

On average it took 25 minutes to complete the questionnaire. Male subjects were interviewed usually on their own but sometimes with the community leaders present. The female subjects were always interviewed in the presence of other family members, and most of the time the head of the family was also present.

When the subjects knew that I was a medical practitioner and especially that I was practicing and trained in the U.K., frequently they also wanted advice for their physical and mental problems. In those cases, subjects were advised to discuss those matters at the end of the interview when the questionnaire was completed. Sometimes I had to spend a few minutes discussing their illness queries after completion of the questionnaire.

All subjects were interviewed at their homes, sometimes in the presence of other family members. The extended family concept is still been followed throughout India, especially in the villages and small towns, though this concept has been changing in the cities. Most of the elderly subjects were interviewed at their homes and were living with extended families including immediate and close relatives.

SURVEY QUESTIONNAIRES

QUESTIONNAIRE: PARTS 1 to 3

Part 1

1. Date of interview

2. Reference Number

3. Subjects Serial Number

4. Name and Address of the Family Doctor

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5. Sex

1. Male 2. Female

6. Age in years

7. Nationality

1. Indian 4. Bangladesh
2. Pakistani 5. Others
3. British (please specify)

8. Ethnic group

1. Bengali 5. Rajput
2. Punjab 6. Hindustani

3. Pathan
4. Guzrati
7. Tamil
8. Other (please specify) _____

9. Country of birth

1. India
2. Pakistan
3. Bangladesh
4. U.K.
5. Other (please specify) _____

10. Religion

1. Hindu
2. Muslim
3. Sikh
4. Christian
5. Buddhist
6. Jain
7. Atheist
8. Other (please specify) _____

11. Religious practice

1. Practising
2. Non-practising

12. Occupation

1. Full time
2. Part time
3. Student
4. Unemployed
5. Retired
6. Housewife
7. Other (please specify) _____

13. Social class

1. Upper class (U.C.)
2. Middle class (M.C.)

3. Lower class (L.C.)

14. Marital status

1. Single
2. Married (once)
3. Married (more than once)
4. Divorced
5. Separated
6. Widowed
7. Single living as married
8. Other (please specify) _____
9. No information

15. Children

1. None
2. Number of boys
3. Number of girls

16. Residential unit

1. Own house/flat
2. Rented house
3. Flat
4. Slum
5. Digs
6. Hostel or destitute
7. Student hall of residence
8. Other (please specify) _____
9. No information

17. Living style

1. Alone
2. Living with spouse (wife/husband/children)

3. Extended family (with immediate and/or other relatives)

18. How long have you lived there?

1. More than two years

2. Less than two years

19. How long have you lived in that area?

1. More than two years

2. Less than two years

20. Education in homeland

1. Primary school
2. Secondary school
3. College
4. University
5. Post graduate
6. Nil

Part 2

The following numbers refer to family members of the subject:

1. Father	6. Sister
2. Mother	7. Son
3. Wife	8. Daughter
4. Husband	9. Other relative who has brought you up
5. Brother	10. Cohabitant

1. Has any member of your family ever had problems with their health due to the following:

Eating too much?	1. Yes	2. No	3. Uncertain	
	If yes, who?			
Smoking too much?	1. Yes	2. No	3. Uncertain	
	If yes, who?			
Overworking?	1. Yes	2. No	3. Uncertain	
	If yes, who?			

Drinking alcohol? 1. Yes 2. No 3. Uncertain

If yes, who?

2. **Have there ever been arguments in the family about some other member of the family, not yourself because of the following:**

Work? 1. Yes 2. No 3. Uncertain

If yes, who?

Gambling? 1. Yes 2. No 3. Uncertain

If yes, who?

Drinking? 1. Yes 2. No 3. Uncertain

If yes, who?

3. **Does anybody drink in your family at present?**

1. Yes 2. No 3. Don't know

If yes, who?

4. **Do you think anyone in your family now or in the past:**

Eats/eaten too much? 1. Yes 2. No 3. Uncertain

If yes, who?

Smokes/smoked too much?	1. Yes If yes, who?	2. No	3. Uncertain	
Drinks too much?	1. Yes If yes, who?	2. No	3. Uncertain	
Drank too much?	1. Yes If yes, who?	2. No	3. Uncertain	

5. Has any member had trouble with the police?

1. Yes 2. No 3. Don't know

If yes, who?

1. Once
2. Twice
3. Three times or more

Committed an offence due to drinking?

1. Yes 2. No

6. **Has any member of your family ever lost a job or got into trouble at work because of the following?**

Illness? 1. Yes 2. No 3. Uncertain

If yes, who?

Drinking? 1. Yes 2. No 3. Uncertain

If yes, who?

Questions about each family drinker

7. **Does he/she drink alone?**

1. Yes 2. No 3. Uncertain

8. **Does he/she drink in the morning to steady nerves or to get rid of a hangover?**

1. Yes 2. No 3. Uncertain

9. **Has he/she ever tried to cut down or stop drinking?**

1. Yes 2. No 3. Uncertain

10. **Has he/she had any hospital admission, outpatient treatment or gone to anyone for help for drinking?**

1. Yes 2. No 3. Uncertain

Attitude questions

11. Does your religion allow alcohol drinking?

1. Yes 2. No 3. Uncertain

12. Is alcohol drinking accepted in your family?

1. Yes 2. No 3. Uncertain

13. Is alcohol drinking accepted in your society?

1. Yes 2. No 3. Uncertain

Part 3

1. Do you smoke cigarettes?

1. Yes 2. No

If yes, how many a day?

2. **Do you think you are a:**

1. Poor eater
2. Average eater
3. More than average eater

3. Do you watch television?

1. Rarely or never

2. Occasionally (3 days/week)

3. Regularly (more than 3 days a week)

4. Do you drink alcohol?

1. Yes 2. No

5. If not, have you ever drunk alcohol?

1. Yes 2. No

6. At what age did you start drinking alcohol

7. How often do you drink alcohol?

1. Daily

2. Weekly

3. Monthly

4. Occasionally

8. Have you ever had problems with your health because of the following:

Eating too much? 1. Yes 2. No 3. Uncertain

Smoking too much?	1. Yes	2. No	3. Uncertain	
Drinking too much?	1. Yes	2. No	3. Uncertain	

9. How much did you drink last week?

(converted into units)

10. If you did not drink last week, how much did you drink last month?

11. If not last month, how much have you drunk in the last six months?

12. What type of alcohol do you drink?

1. Beer
2. Sherry
3. Whisky
4. Brandy
5. Gin
6. Cider
7. Rum
8. Wine
9. Other type – specify _____

13. In which of these places did you drink alcohol?

1. Public houses
5. Restaurant

2. Own home
3. Friend's home
4. At a relative's home
6. Social event
7. Clubs
8. Other place – specify _____

14. When you smoke, do you prefer to smoke?

1. Alone 2. In company 3. Not applicable

15. When you drink, do you prefer to drink?

1. Alone 2. In company 3. Either

16. Are you vegetarian?

1. Yes 2. No

17. When you go to the cinema or watch television, do you watch mostly?

1. English films 2. Asian films 3. Either

18. Do you go to your doctor to check your health regularly?

1. Yes 2. No 3. Uncertain

19. Do you take any drug regularly for a health problem?

1. Yes 2. No

20. If yes, what are they?

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21. Have you consulted your doctor in the past six months?

1. Yes 2. No

22. Do you take any other drug which may <u>not</u> have been prescribed by your doctor (or another doctor)?

1. Yes 2. No

23. If yes, which of the following drugs do you take/have taken?

1. Cannabis
2. L.S.D. group
3. Amphetamine group
4. Opiate group
5. Other drugs of dependence
6. More than one drug of dependence

24. Do you think that you have now or in the past:

1. Eaten too much?	1. Yes	2. No	3. Uncertain
2. Smoked too much?	1. Yes	2. No	3. Uncertain
3. Drink too much now?	1. Yes	2. No	3. Uncertain

4. Drank too much in the past? 1. Yes 2. No 3. Uncertain

25. Do you have proper medical facilities in your area?

1. Yes 2. No 3. Uncertain

26. Have you ever consulted your family doctor for drinking problem?

1. Yes 2. No 3. Uncertain

27. Have you got good facilities in your area for social events/gatherings?

1. Yes 2. No 3. Don't know

28. When you wake up in the mornings do you sometimes:

Have a cigarette? 1. Yes 2. No

Have a drink of alcohol? 1. Yes 2. No

29. How much money do you spend on entertainment per week?

1. None
2. Up to £2.00 (Rs/160.00)
3. £2.00 or more (Rs/160.00 or more)
4. Don't know

30. How much money do you spend on alcoholic drinks per week on average?

1. None
2. Up to £4.00 (Rs/320.00)
3. £4.00 - £8.00 (Rs/320.00 – Rs/640.00)
4. £8.00 or more (Rs/640.00 or more)
5. Don't know

31. How much have you spent last week on alcoholic drinks?

1. None
2. Up to £4.00 (Rs/320)
3. £4.00 - £8.00 (Rs/320.00 – Rs/640.00)
4. £8.00 or more (Rs/640.00 or more)
5. Don't know

QUESTIONNAIRE – PART 4
(The Brief Michigan Alcoholism Screening Test)

Questions		Circle correct answer	
BMAST1	Do you feel you are a normal drinker?	Yes (0)	No (2)
BMAST2	Do friends or relatives think you are a normal drinker?	Yes (0)	No (2)
BMAST3	Have you attended a meeting of Alcoholics Anonymous (A.A.)?	Yes (5)	No (0)
BMAST4	Have you lost friends or girlfriends/boyfriends because of drinking?	Yes (2)	No (0)
BMAST5	Have you ever gotten into trouble at work because of drinking?	Yes (2)	No (0)
BMAST6	Have you ever neglected your obligations, your family or your work for two or more days in a row because you were drinking?	Yes (2)	No (0)
BMAST7	Have you ever had delirium tremens (DTs) severe shaking, heard voices or seen things that weren't there after heavy drinking?	Yes (2)	No (0)
BMAST8	Have you ever gone to anyone for help about your drinking?	Yes (5)	No (0)
BMAST9	Have you ever been in hospital because of drinking?	Yes (5)	No (0)
BMAST10	Have you ever been arrested for drunk driving or driving after a drink?	Yes (2)	No (0)

End of Survey Questionnaire

MICHIGAN ALCOHOLISM SCREENING TEST (M.A.S.T.) QUESTIONNAIRE

Points			YES	NO
	0	Do you enjoy a drink now and then?	_____	_____
(2)	1.*	Do you feel you are a normal drinker? (By normal we mean do you drink less or as much as most other people?)	_____	_____
(2)	2.	Have you ever awakened the morning after some drinking the night before and found that you could not remember a part of the evening?	_____	_____
(1)	3.	Does your wife, husband, a parent, or other near relative ever worry or complain about your drinking?	_____	_____
(2)	4.*	Can you stop drinking without a struggle after one or two drinks?	_____	_____
(1)	5.	Do you ever feel guilty about your drinking?	_____	_____
(2)	6.*	Do friends or relatives think you are a normal drinker?	_____	_____
(2)	7.*	Are you able to stop drinking when you want to?	_____	_____
(5)	8.	Have you ever attended a meeting of Alcoholics Anonymous (AA)?	_____	_____
(1)	9.	Have you gotten into physical fights when drinking?	_____	_____
(2)	10.	Has your drinking ever created problems between you and your wife, husband, a parent, or other relative?	_____	_____
(2)	11.	Has your wife, husband (or other family members) ever gone to anyone for help about your drinking?	_____	_____
(2)	12.	Have you ever lost friends because of your drinking?	_____	_____
(2)	13.	Have you ever gotten into trouble at work or school because of drinking?	_____	_____
(2)	14.	Have you ever lost a job because of drinking?	_____	_____
(2)	15.	Have you ever neglected your obligations, your family or your work for two or more days in a row because you were drinking?	_____	_____
(1)	16.	Do you drink before noon fairly often?	_____	_____
(2)	17.	Have you ever been told you have liver trouble? Cirrhosis?	_____	_____

* **Alcoholic response is negative.**

(2)	18.**	After heavy drinking have you ever had Delirium Tremens (DTs) or severe shaking, or heard voices or seen things that really weren't there?	_____	_____
(5)	19.	Have you ever gone to anyone for help about your drinking	_____	_____

(5) 20. Have you ever been in a hospital because of drinking? _____ _____

(2) 21. Have you ever been a patient in a psychiatric hospital or on a psychiatric ward of a general hospital when drinking was part of the problem that resulted in hospitalisation? _____ _____

(2) 22. Have you ever been seen at a psychiatric or mental health clinic or gone to any doctor, social worker, or clergyman for help with any emotional problem, when drinking was part of the problem? _____ _____

(2) 23.*** Have you ever been arrested for drunk driving, driving while intoxicated, or driving under the influence of alcoholic beverages? _____ _____

(IF YES, How many times? _____)

(2) 24.*** Have you ever been arrested, or taken into custody, even for a few hours, because of other drunk behaviour? _____ _____

(IF YES, How many times? _____)

(2) 25. Have you ever been arrested for drunk driving or driving _____ _____

** **5 points for Delirium Tremens**

*** **2 points for <u>each</u> arrest**

SHORT MICHIGAN ALCOHOLISM SCREENING TEST (S.M.A.S.T.)

Selzer et al (380) published a report exploring the reliability and validity of the M.A.S.T. as a self-administered questionnaire. In addition, a Short Michigan Alcoholism Screening Test (S.M.A.S.T.) was introduced and its reliability and validity reported using just 13 items of the M.A.S.T. questionnaire. They concluded that the distribution of S.M.A.S.T. scores is similar to the distribution of M.A.S.T. scores. The percentage of subjects scoring 0-1, 2 and 3-13 on the S.M.A.S.T. was almost the same (less than 5% difference) as the percentage of the subjects scoring 0-4, 5-6 and 7-24 on the M.A.S.T. They suggested that subjects scoring 0-1 on the S.M.A.S.T. be considered as being non-alcoholics, 2 points possibly alcoholics, and those with 3 or more points "alcoholics". Those questions considered diagnostic on the M.A.S.T. would remain so on the S.M.A.S.T. (S.M.A.S.T. questions 6, 10, 11).

S.M.A.S.T. QUESTIONNAIRE

1. Do you feel you are a normal drinker? (By normal drinker we mean you drink less than or as much as most other people.) (No)*
2. Does your wife, husband, a parent, or other relative ever worry or complain about your drinking? (Yes)
3. Do you ever feel guilty about your drinking? (Yes)
4. Do friends and relatives think you are a normal drinker? (No)
5. Are you able to stop drinking when you want to? (No)
6. Have you ever attended a meeting of Alcoholic Anonymous? (Yes)
7. Has drinking ever created problem between you and your wife, husband, a parent, or other near relative? (Yes)
8. Have you ever gotten into trouble at work because of drinking? (Yes)
9. Have you ever neglected your obligation, your family, or your work for two or more days in a row because you were drinking? (Yes)
10. Have you ever gone to anyone for help about your drinking? (Yes)
11. Have you ever been in a hospital because of drinking? (Yes)

12. Have you ever been arrested for drunken driving, driving while intoxicated, or driving under the influence of alcoholic beverages? (Yes)

13. Have you ever been arrested, even for a few hours, because of other drunken behaviour? (Yes)

* Alcoholism-indicating responses in parentheses.

Selzer commented that the scoring norms would find a high proportion of alcoholics. However, the screening may include many 'false positives'; for screening instruments such as the M.A.S.T. or S.M.A.S.T., such norms are more appropriate than those that may offer maximum correct classification (381). It follows then that in applying these norms for the determination of alcoholism it is important for the clinician and researcher to remember that the M.A.S.T. and S.M.A.S.T. are screening devices rather than final diagnostic instruments. The alcoholism-indicating responses which pertain exclusively to the past obviously do not necessarily indicate current alcohol problems.

THE BRIEF M.A.S.T. QUESTIONNAIRE (B.M.A.S.T.)

The B.M.A.S.T. is a shortened version of the Michigan Alcoholism Screening Test. Pokorny and colleagues (382) became interested in using the M.A.S.T. as a device to detect "alcoholism" as part of a large scale prospective study of psychiatric hospital admissions. This involved the application of a screening interview and questionnaire designed to identify most of the common psychopathological syndromes. They found that, in that context, the 25 questions making up the M.A.S.T. seemed excessive and they expressed the need for a shortened version.

An inspection of Selzer's M.A.S.T. (375) showed that he gave a number of items extra weight because they were the most discriminating. On the basis of those weights and his published responses for a group of 116 alcoholics and a group of 103 non-alcoholics, Pokorny (382) selected what appeared to be the 10 best questions (items 1, 6, 9, 13, 14, 16, 19, 20, 21 and 25) and predicted that these would do as well or nearly as well in identifying "alcoholics" as the entire 25 items.

In a study to test this hypothesis, the full 25 question M.A.S.T. was given to 60 patients being treated for "alcoholism" and to 62 randomly selected patients with mixed psychiatric diagnoses, but not known to have "alcoholism" or drinking problems (although patients were not examined in advance to exclude "alcoholism" and this "non-alcoholic" group did turn out to contain a few "alcoholics"). The subjects were all male psychiatric inpatients in a hospital; the two groups were similar in age and ethnic composition. Table 1 shows the responses in this study to the 25 questions. The ten questions that were selected for the brief version of the M.A.S.T. have their question numbers enclosed in parentheses. The results were similar to the findings of Selzer, although they found more drinking problems in the non-alcoholic group (Table 2).

The authors observed that the brief ten item version of the M.A.S.T. appeared to perform as well as Selzer's 25 item version. The short M.A.S.T. could save a considerable amount of time when used for mass administration or when incorporated with similar screening devices for other aspects of psychopathology.

The B.M.A.S.T. table also incorporates a simplified method of scoring that places the numerical values adjacent to the yes and no answers. They also commented that if the B.M.A.S.T. were to be given in written form, it might be well to either disguise or omit these numbers so as not to influence the responses.

The results were summarized with 10 of the 25 questions of the M.A.S.T. selected to comprise a brief version. Both the long and brief versions were given to samples of 60 alcoholics and 62 non-alcoholics. The correlation between the scores on the brief and long versions of the M.A.S.T. was high, ranging from .95 to .99. The two versions discriminated equally well between "alcoholics" and "non-alcoholic" psychiatric patients. The authors concluded that the B.M.A.S.T. was as good as the 25 question M.A.S.T. and was actually superior in situations where brevity is desirable.

In this study, the B.M.A.S.T. was used but embedded in several other questions relating to health, social and other activities. It was found that the respondents were happy to respond to the smaller version and it took a much shorter time to complete than the lengthy version I had used in my pilot study in the past.

Most medical experts (376) now consider the effects of sustained heavy drinking to be comparable with drug addiction in that the initial development of some degree of tolerance is eventually replaced by chronic physical dependence.

In this climate of opinion, surveys of alcohol consumption have become increasingly important, both to establish patterns of consumption and to identify groups at risk of developing drinking problems. A major problem with drinking surveys is that they typically appear to account for half or even less of total consumption, according to the taxation figures; the reasons for this shortfall are considered to be non-response by heavy drinkers and under-reporting of consumption by respondents.

The method most frequently used to assess drinking habits involves asking respondents to recall their consumption retrospectively over past seven days. This could avoid biases arising from asking people for their usual drinking behaviour and reduces the response problems associated with keeping daily diaries, but it is vulnerable to memory problems.

TABLE 1: M.A.S.T. RESPONSES OF HOSPITALISED ALCOHOLICS AND NON-ALCOHOLIC CONTROLS

			Alcoholics		Non-alcoholics	
			(n = 60)		(n = 62)	
Points	Questions		Yes	No	Yes	No
2	(*1)	Do you feel you are a normal drinker?	1	59	39	23
2	2	Have you ever wakened the morning after some drinking the night before and found that you could not remember a part of the evening before?	54	6	15	47

1	3	Does your wife or parents ever worry or complain about your drinking?	55	5	15	47
2	*4	Can you stop drinking without a struggle after one or two drinks?	9	51	54	8
1	5	Do you ever feel bad about your drinking?	55	5	23	39
2	(*6)	Do friends/relatives think you are a normal drinker?	11	49	44	18
0	7	Do you ever try to limit your drinking to certain times of the day or to certain places?	36	24	33	29
2	*8	Are you always able to stop drinking when you want to?	6	54	54	8
5	(9)	Have you ever attended a meeting of Alcoholics Anonymous (AA)?	44	16	11	51
1	10	Have you gotten into fights when drinking?	44	16	10	52
	11	Has drinking ever created problems with you and your wife?	49	11	16	46
2	12	Has your wife (or other family member) ever gone to anyone for help about your drinking?	37	23	4	58
2	(13)	Have you ever lost friends or girlfriends/boyfriends because of drinking?	45	15	5	57
2	(14)	Have you ever gotten into trouble at work because of drinking?	44	16	4	58
2	15	Have you ever lost a job because of drinking?	43	17	3	59
2	(16)	Have you ever neglected your obligations, your family or your work for two or more days	54	6	4	58

		because you were drinking?				
1	17	Do you ever drink before noon?	58	2	24	38
2	18	Have you ever been told you have liver trouble/ cirrhosis?	14	46	3	59
2	(19)	Have you ever had delirium tremens (DTs), severe shaking, heard voices or seen things that weren't there after heavy drinking?	33	27	6	56
5	(20)	Have you ever gone to anyone for help about your drinking?	50	10	5	57
5	(21)	Have you ever been in a hospital because of drinking?	40	20	6	56
2	22	Have you ever been a patient in a psychiatric hospital or on a psychiatric ward of a general hospital where drinking was part of the problem?	22	38	10	52
2	23	Have you ever been seen at a psychiatric or mental health clinic, or gone to a doctor, social worker or clergyman for help with an emotional problem in which drinking had played a part?	29	31	5	57
2	24	Have you ever been arrested, even for a few hours, because of drunk behaviour?	47	13	11	51
2	(25)	Have you ever been arrested for drunk driving or driving after drinking?	32	28	3	59

TABLE 2: COMPARISON OF DISTRIBUTION OF ALCOHOLICS AND NON-ALCOHOLICS ON LONG AND BRIEF VERSIONS OF M.A.S.T.

WEIGHTED SCORES

For 25-question M.A.S.T.	ALCOHOLICS	NON-ALCOHOLICS
0-10	0	51
11-21	3	7
22-23	14	1
34-45	30	3
46 and over	13	0

For 10-question M.A.S.T.	ALCOHOLICS	NON-ALCOHOLICS
0-5	0	55
6-11	6	2
12-17	5	2
18-25	33	3
26-29	16	0

APPLICATION OF SURVEY QUESTIONNAIRE

The questionnaire was devised in the English language, was mostly structured and its primary objective disguised. It was easier to administer to subjects from the upper and middle educated socioeconomic class as English was their second language. They could understand and communicate easily when responding to the items.

For subjects from lower working socioeconomic class groups, the questionnaire had to be translated, mostly into the Bengali and Hindi languages. As the questions were mostly structured, translation was not found to be difficult and all subjects understood the contents of the questions, which was evident from their responses. Before starting to use the translated questionnaire it was checked by translating it back into the English language, and no discrepancy was recorded in respect of the content.

ETHICAL ISSUES

There were no known formalities needed to comply with the rules and regulations of any local ethical committees of the West Bengal State of India. Consent was also obtained from every subject in the presence of a witness, before the interview.

STATISTICAL METHODS

The data from the questionnaire was initially summarised overall (i.e. for all respondents combined) and then for each of the three main religious groups separately. Categorical items were summarised using simple frequency counts and, where appropriate, using odds ratios with their 95% confidence intervals; comparisons between sub-groups were made using the Fisher exact test. Continuous measures for which a Normal (Gaussian) distribution could be assumed were summarised using means and standard deviations; comparisons between sub-groups were made using one way analyses of variance. Continuous measures for which a Normal (Gaussian) distribution could not be assumed were summarised using medians and ranges; comparisons between sub-groups were made using the Kruskal-Wallis test.

CHAPTER 5
RESULTS

As stated before, the main objectives of the survey were as follows:

1. To study the prevalence of alcohol drinking and alcohol dependence among adults in the three religious groups, Hindus, Muslims and Sikhs;
2. To establish whether there are any differences in drinking patterns within these three religious groups;
3. To compare the alcohol drinking habits and alcohol dependence of the three religious groups;
4. To compare the characteristic of alcohol drinkers and alcohol dependents in the three religious groups.

The primary objective of the survey was merely to estimate the prevalence of alcohol drinkers in each of the three religious groups of interest in this community, and to summarise their characteristics. However, it is acknowledged that the analysis presented in this Chapter goes further than mere prevalence estimates and formal statistical comparisons are reported between the three religious groups. Stated generically, the hypotheses being tested in these comparisons were:

Null hypothesis (H_0): the characteristics of alcohol drinkers and their drinking patterns were the same across all three religious groups;

Alternative hypothesis (H_1): the characteristics of alcohol drinkers and their drinking patterns differed across all three religious groups.

SAMPLE SIZE

Altogether a total of 622 subjects were interviewed, of whom almost half (298; 47.9%) were Hindus, approximately one quarter were Muslims (153; 24.6%) and a similar proportion were Sikhs (171; 27.5%).

Most subjects were interviewed at their homes (500; 80.3%) after selecting their names at random (one in three) from the Electoral Register, and were aged 18 or over. The subjects were contacted through their local General Practitioner, after indicating that it was primarily a health survey and alcohol drinking was a part of it.

As stated previously, the initial survey sample contained few Sikhs, so a second (supplementary) sample was taken to rectify this deficiency. The resultant total sample was thus a stratified rather than a simple random sample. Thus, the respondents were not a random representative sample of the survey area overall, but were representative of each of the three religious groups of interest (with an over-preponderance of Sikh relative to the community).

QUESTIONNAIRE PART 1 – SAMPLE DEMOGRAPHICS (Table 1)

INDIVIDUAL VARIABLES vs. RELIGIOUS GROUPS

Sex

The distribution of male and female respondents varied slightly, but not statistically significantly, between the religious groups (Fisher exact test, p = 0.266). In the Hindu group 161 (54.0%) were males and 137 (46.0%) were females; in the Muslim group 78 (51.0%) were males and 75 (49.0%) were females; in the Sikh group 79 (46.2%) were males and 92 (53.8%) were females.

Age

Overall, the mean (s.d.) age of the respondents was 42.3 (18.2) years. On average, the Hindu subjects interviewed were slightly younger (42.0 (17.1) years) than the Muslims (42.6 (17.4) years) and Sikhs (42.6 (20.6) years), but these differences were not statistically significant [one-way ANOVA, p = 0.920].

Nationality

All of the Hindu and Sikh subjects interviewed had Indian nationalities, as did the majority (151/153 = 98.7%) of the Muslim subjects (the remaining two Muslims had Bangladeshi nationalities).

Ethnic groups

Ethnic grouping differed highly significantly between the three religious groups studied [Fisher exact test, $p < 0.001$]. Most Hindu subjects (276; 92.6%) were of Bengali origin but very few were *Punjabi, Pathan, Guzrati, Hindusthani or Tamil.* Among the Muslim subjects, 20 (13.2%) were Bengali, 35 (23.0%) were Punjabi, 23 (15.1%) *Pathan* and 63 (41.4%) were *Hindusthani.* Most Sikh subjects (167; 97.7%) belonged to the *Punjabi* ethnic group while the remainder (4; 2.3%) were *Bengalis.*

Country of birth

All subjects were born in India, with the exceptions of five Muslims who were born in Bangladesh and one Sikh subject who was born in Pakistan.

Religious practice

Significant differences were found between the religious groups regarding the extent to which respondents regularly undertook their religious practices [Fisher exact test, $p < 0.001$]. Just over half of Hindu (161; 54.0%) and Sikh (99; 57.9%) subjects indicated that they were practicing, compared with almost 90% (134; 87.6%) of Muslims.

Occupation

Most male subjects were in either full-time or part-time employment; male unemployment levels were low in all three religious groups. Most female subjects reported themselves as being housewives, though in fact many were found to be working. The differences in occupational status between the three religious groups was statistically significant [Fisher exact test, $p = 0.015$] due to a slightly disproportionate number of Sikh subjects who claimed to be students rather than in employment.

Social class

Most Hindu respondents (226; 75.8%) classified themselves as belonging to the middle class compared to just 37 (24.2%) of the Muslim and 26 (15.2%) of the Sikh subjects. The majority of Muslims claimed to be middle or upper class, while most Sikhs placed themselves as being either lower or middle class. These differences between the religious groups were highly significant [Fisher exact test; $p < 0.001$].

Marital status

Overall, about two-thirds of respondents were married for the first time – this proportion was similar for all three religious groups: Hindus 68.4%, Muslims 73.2% and Sikhs 64.7%. Proportionally, slightly fewer Muslims (34; 22.2%) were single than was the case for both Hindus (92; 31.0%) and Sikhs (57; 33.5%). Six (3.9%) of the Muslim subjects only reported having been married more than once. Although numerically small, these inter-religion differences were statistically highly significant [Fisher exact test, $p < 0.001$).

Number of children

Male children

The average (mean) numbers of male children in the Hindu, Muslim and Sikh religious groups were 1.22, 1.88 and 1.36 respectively. 119 (39.9%) of the Hindus, 48 (30.1%) of the Muslims and 67 (39.2%) of the Sikhs reported that they had no male children. These differences were highly significant [Kruskal-Wallis test; $p < 0.001$].

Female children

The average (mean) numbers of female children in the Hindu, Muslim and Sikh religious groups were 0.98, 1.99 and 1.27 respectively. 147 (49.3%) of the Hindus, 50 (32.7%) of the Muslims and 80 (46.8%) of the Sikhs reported that they had no female children. These differences were also highly significant [Kruskal-Wallis test; $p < 0.001$].

Total number of children

The average (mean) numbers of children overall in the Hindu, Muslim and Sikh religious groups were 2.21, 3.87 and 2.63 respectively. 114 (38.3%) of the Hindus, 45 (29.4%) of the Muslims and 67 (39.2%) of the Sikhs reported that they had no children at all. Again, these differences were highly significant [Kruskal-Wallis test; $p < 0.001$].

Residential unit

Overall, just over half of the subjects reported that they lived in their own house/flat, including 184 (61.7%) of the Hindus, 90 (58.3%) of the Muslims and 78 (45.6%) of

the Sikhs. The remainder of the Hindu and Sikh respondents predominantly lived in a rented house or flat, but a sizeable number of Muslims (25; 16.3%) reported living in a slum. These differences between the three religious groups were statistically highly significant [Fisher exact test, $p < 0.001$].

Living style

The great majority of the subjects lived in extended families or with spouses. Only one Hindu (0.3%), one Muslim (0.7%) and four (2.3%) Sikh subjects reported that they lived alone. The differences between the groups, although small and of no importance, came close to statistical significance [Fisher exact test, $p = 0.056$].

Education

Most Hindu subjects interviewed (244; 81.8%) had been educated to a very high level (Technical College level or above). This level of education had been reached by only 94 (61.4%) of the Muslims and just 83 (47.9%) of the Sikhs. The differences in educational level between the three religious groups were highly significant [Fisher exact test, $p < 0.001$].

INTER-RELATIONSHIPS BETWEEN DEMOGRAPHIC VARIABLES AND RELIGIOUS GROUP

Because the numbers of respondents in all three religious groups indicating that they drank alcohol were very small, a complex analysis of multivariate relationships between individual questionnaire items and alcohol use was not possible (this issue is re-visited in section 5.3 below). However, to be certain that the inferences drawn later in this section and in the discussion were as robust as possible, a small number of interactions between several demographic variables were examined briefly.

Age and other demographic variables

Not unexpectedly:

- married respondents were older (mean (s.d.) = 22.7 (5.6)) than those who were single (50.3 (15.1)) ($p < 0.001$);
- respondents who owned or rented a house were significantly older (42.1 (17.8)) than those who lived in a flat (30.5 (13.0)) ($p < 0.001$);

- age tended to increase with number of children (Pearson correlation r = 0.777, p < 0.001);
- students tended to be younger (20.9 (2.5)) than retired respondents (69.2 (5.7));
- mean age was identical across all three social class categories (p = 0.957).

Less predictably:

- male respondents tended to be older than females [43.4 (sd 18.9) vs. 41.2 (17.4)] – this difference was equal in all three religious groups and not significant overall (sex * religious group interaction p = 0.214; sex main effect p = 0.111);
- respondents who claimed to be "practicing" their religion were significantly older than those who categorized themselves as being "non-practicing" [48.5 (sd 17.7) vs. 31.7 (13.5); p < 0.001] – but this difference was equal in all three religious groups (p = 0.265);
- housewives were significantly older than respondents in full or part-time work (51.0 (14.3) vs. 37.9 (13.2); p < 0.001) – but the mean ages of those in full and part-time employment were almost identical (37.8 (12.6) vs. 37.9 (14.9))
- age was *inversely* correlated with education (i.e. less educated respondents were older) (p < 0.001).

Number of children and other demographic variables

- As respondents who claimed to be "practicing" their religion were significantly older than those who categorized themselves as being "non-practicing", they also had significantly more children (average 3.57 vs. 1.28, p < 0.001).
- Hindustani and Pathan ethnic group respondents tended to report more children (of both sexes) than all other ethnic groups (p < 0.001).
- Respondent categorized as "lower class" had more children than those who were middle or upper class (averages 3.52 vs. 2.32 vs. 2.70 respectively; p < 0.001).

- Number of children was inversely related to educational attainment (i.e. respondents with the lowest educational level had most children on average) ($p < 0.001$).

Place of residence and other demographic variables

Predictably, place of residence correlated strongly with other social measures. The proportions of lower, middle and upper socioeconomic class respondents living in their own houses were 8.8%, 61.2% and 92.5%, whereas the corresponding figures for rented house and flat dwellers were 72.5%, 38.0% and 7.5% ($p < 0.001$). Occupational groups most likely to live in their own house were those who were in full-time or part-time employment, retired, housewives or students, while those who indicated they were unemployed were most likely to live in rented accommodation ($p < 0.001$).

Educational attainment and other demographic variables

As might be expected from the previous sections, educational attainment was strongly correlated with other social measures. Specifically, 61.6% and 44.7% of respondents in full-time and part-time employment respectively had been educated to University level, compared with just 27.3% of the unemployed and 13.7% of housewives ($p < 0.001$). The relationship between social class and educational level was a little more surprising, but still statistically very significant ($p < 0.001$): the proportions of low, middle and upper class respondents who had been educated to University level were 0%, 47.4% and 51.7% respectively.

TABLE 1: QUESTIONNAIRE PART 1 - SAMPLE DEMOGRAPHICS: N (%)

		Hindu	Muslim	Sikh	Total	P
Number of respondents		298	153	171	622	
Sex:	**male**	161 (54.0)	78 (51.0)	79 (46.2)	318 (51.1)	0.266*
	Female	137 (46.0)	75 (49.0)	92 (53.8)	304 (48.9)	
Age	**mean (s.d.)**	42.0 (17.1)	42.6 (17.4)	42.6 (20.6)	42.3 (18.2)	0.920**
Nationality	**Indian**	298 (100.)	151 (98.7)	171 (100.)	620 (99.7)	‡
	Bangladeshi	0	2 (1.3)	0	2 (0.3)	
Ethnic group:	**Bengali**	276 (92.6)	20 (13.2)	4 (2.3)	300 (48.3)	**<0.001***
	Punjabi	8 (2.7)	35 (23.0)	167 (97.7)	210 (33.8)	
	Pathan	0	23 (15.1)	0	23 (3.7)	
	Guzrati	5 (1.7)	0	0	5 (0.8)	
	Hindusthani	7 (2.3)	63 (41.4)	0	70 (11.3)	
	Tamil	2 (0.7)	0	0	2 (0.3)	
	Other	0	11 (7.2)	0	11 (1.8)	
Country of birth:	**India**	298 (100.)	148 (96.7)	170 (99.4)	616 (99.0)	‡‡
	Pakistan	0	0	1 (0.2)	1 (0.2)	
	Bangladesh	0	5 (3.3)	0	5 (0.8)	
Religious practice:	**practising**	161 (54.0)	134 (87.6)	99 (57.9)	394 (63.3)	**<0.001***
	non-practising	137 (46.0)	19 (12.4)	72 (42.1)	228 (36.7)	
Occupation:	**full-time**	57 (19.1)	44 (28.8)	37 (21.8)	138 (22.2)	**0.015***
	part-time	66 (22.1)	27 (17.6)	24 (14.1)	117 (18.8)	
	Student	42 (14.1)	15 (9.8)	35 (20.6)	92 (14.8)	
	Unemployed	11 (3.7)	9 (5.9)	2 (1.2)	22 (3.5)	
	Retired	39 (13.1)	13 (8.5)	15 (8.8)	67 (10.8)	
	Housewife	82 (27.5)	44 (28.8)	56 (32.9)	182 (29.3)	
	Other	1 (0.3)	1 (0.7)	1 (0.6)	3 (0.5)	
Social class:	**lower class**	29 (9.7)	48 (31.4)	82 (48.0)	159 (25.6)	**<0.001***
	middle class	226 (75.8)	37 (24.2)	26 (15.2)	289 (46.5)	
	upper class	43 (14.4)	68 (44.4)	63 (36.8)	174 (28.0)	
Marital status:	**single**	92 (31.0)	34 (22.2)	57 (33.5)	183 (29.5)	**<0.001***
	married once	203 (68.4)	112 (73.2)	110 (64.7)	425 (68.5)	
	married more than once	0	6 (3.9)	0	6 (1.0)	
	Divorced	0	1 (0.7)	0	1 (0.2)	
	Widowed	2 (0.7)	0	3 (1.8)	5 (0.8)	

* : Fisher exact test

**: one-way ANOVA

‡: too few Bangladeshi respondents for analysis

‡‡: too few respondents born outside India for analysis

TABLE 1: QUESTIONNAIRE PART 1 - SAMPLE DEMOGRAPHICS: N (%) **(contd.)**

	Hindu	Muslim	Sikh	Total	P
Number of respondents	298	153	171	622	
Number of male children: 0	119 (39.9)	46 (30.1)	67 (39.2)	232 (37.3)	**<0.001***
1	61 (20.5)	16 (10.5)	21 (12.3)	98 (15.8)	
2	71 (23.8)	27 (17.6)	48 (28.1)	146 (23.5)	
3	31 (10.4)	47 (30.7)	27 (15.8)	105 (16.9)	
4+	16 (5.4)	17 (11.2)	8 (4.7)	41 (6.5)	
mean	1.22	1.88	1.36	1.42	
Number of female children: 0	147 (49.3)	50 (32.7)	80 (46.8)	277 (44.5)	**<0.001***
1	49 (16.4)	17 (11.1)	16 (9.4)	82 (13.2)	
2	67 (22.5)	29 (19.0)	36 (21.1)	132 (21.2)	
3	30 (10.1)	23 (15.0)	26 (15.2)	79 (12.7)	
4+	5 (1.7)	34 (22.3)	13 (7.6)	52 (8.4)	
mean	0.98	1.99	1.27	1.31	
Total number of children: 0	114 (38.3)	45 (29.4)	67 (39.2)	226 (36.3)	**<0.001***
1	24 (8.1)	3 (2.0)	5 (2.9)	32 (5.1)	
2	36 (12.1)	14 (9.2)	19 (11.1)	69 (11.1)	
3	30 (10.1)	7 (4.6)	8 (4.7)	45 (7.2)	
4	38 (12.8)	12 (7.8)	21 (12.3)	71 (11.4)	
5	34 (11.4)	16 (10.5)	20 (11.7)	70 (11.3)	
6+	22 (7.3)	56 (36.8)	31 (18.2)	109 (17.5)	
mean	2.21	3.87	2.63	2.73	
Residential unit: own house / flat	184 (61.7)	90 (58.8)	78 (45.6)	352 (56.6)	**<0.001****
rented house	99 (33.2)	38 (24.8)	86 (50.3)	223 (35.9)	
flat	10 (3.4)	0	5 (2.9)	15 (2.4)	
slum	5 (1.7)	25 (16.3)	2 (1.2)	32 (5.1)	
Living style: alone	1 (0.3)	1 (0.7)	4 (2.3)	6 (1.0)	**0.056****
with spouse	58 (19.5)	23 (15.0)	41 (24.0)	122 (19.6)	
extended family	239 (80.2)	129 (84.3)	126 (73.7)	494 (79.4)	

*: Kruskal-Wallis test

**: Fisher exact test

TABLE 1: QUESTIONNAIRE PART 1 - SAMPLE DEMOGRAPHICS: N (%) (contd.)

	Hindu	Muslim	Sikh	Total	p*
Number of respondents	298	153	171	622	
How long have you lived there:					
>2 years	55 (18.5)	30 (19.6)	25 (14.6)	110 (17.7)	0.446
<2 years	243 (81.5)	123 (80.4)	146 (85.4)	512 (82.3)	
How long lived in that area:					
>2 years	53 (17.8)	30 (19.6)	26 (15.2)	109 (17.5)	0.567
<2 years	245 (82.2)	123 (80.4)	145 (84.8)	513 (82.5)	
Education: nil	13 (4.4)	25 (16.3)	15 (8.8)	53 (8.5)	
primary school	12 (4.0)	18 (11.8)	27 (15.9)	57 (9.2)	
secondary school	29 (9.7)	16 (10.5)	45 (26.5)	90 (14.5)	**<0.001**
(Technical) college	102 (34.2)	38 (24.8)	54 (31.8)	194 (31.2)	
University	127 (42.6)	47 (30.7)	29 (17.1)	203 (32.7)	
postgraduate	15 (5.0)	9 (5.9)	0	24 (3.9)	

* : Fisher exact test

QUESTIONNAIRE PART 2 – FAMILY HEALTH/ALCOHOL DRINKING/ATTITUDES ETC (Table 2)

Family health problems

Very few respondents reported any family members having health problems due to over-eating, smoking or over-working. The number of individuals who identified a family member as having an alcohol-related health problem was slightly higher (12; 1.9% of all respondents) but still small; however, the number reported by Hindus (0.3%) was significantly smaller than for either Muslims (2.6%) or Sikhs (4.1%) [Fisher exact test, $p = 0.005$].

Family arguments

Similarly, few respondents reported family arguments because of over-working (1.6%), gambling (0.2%) or drinking alcohol (4.2%) – but again, the proportion of Hindus (0.7%) who reported alcohol-related arguments was significantly smaller than for either Muslims (5.9%) or Sikhs (8.8%) [Fisher exact test, $p < 0.001$].

Family members who currently drink alcohol

Only 7 (2.3%) of the Hindu respondents reported that they had family members who were alcohol drinkers, compared with 15 (9.8%) of the Muslims and 52 (30.4%) of Sikhs. These differences were all statistically highly significant Fisher exact test, $p < 0.001$].

Perceptions of family members

Overall, few respondents reported that anyone in their family ate or smoked too much, or had lost their job / got into trouble at work due to illness. When questioned about alcohol drinking levels of family members both currently and in the past, however, the situation was much different. Relatively few Hindus (3; 1.0%) or Muslims (7; 4.6%) considered that any family members were excessive alcohol drinkers, either now or in the past; however, the corresponding figure for Sikhs (28; 16.6%) was significantly greater [Fisher exact test; $p < 0.001$].

Family members with alcohol related problems

Only two respondents (1 Muslim and 1 Sikh) reported a family member who had lost their job or been in trouble at work due to illness. The corresponding numbers for drinking related work problems were 2 Hindus, 4 Muslims and 9 Sikhs (total 15 = 2.4% of all respondents); these differences were small numerically but statistically significant [Fisher exact test; p = 0.005].

Family members' alcohol drinking patterns

Just under a half (35/74 = 47.3%) of family members who were reported as being alcohol drinkers had been observed drinking alone, and this was similar across the three religious groups [Fisher exact test, p = 0.164]. Four (1 Muslim and 3 Sikhs) had tried to cut down or stop, and 1 Hindu was attending hospital for drinking related problems.

Overall, just less than 20% of respondents had observed a family member drinking in the morning – but this figure varied significantly between the religious groups, ranging from 57.1% of the Hindus down to 13.3% of Muslims and 15.4% of Sikhs [Fisher exact test, p = 0.046]. However, these numbers are all very small and should be interpreted with great caution.

Family members' alcohol drinking patterns: religious grroups

When asked whether their religion permitted the drinking of alcohol, highly significant differences were observed between the three religious groups. Almost half (140; 47.0%) of the Hindus interviewed responded affirmatively to this question, whereas very few Muslims (1; 0.7%) and Sikhs (5; 2.9%) did so.

The response to the question whether alcohol drinking was accepted in the subjects' family also produced a highly significant difference between the religious groups; most (96; 56.1%) of the Sikh subjects responded affirmatively to this question compared to 38 (12.8%) of the Hindus and 24 (15.7%) of the Muslims.

Finally, significantly more Sikh subjects (129; 75.4%) gave a positive response to the question about whether alcohol drinking was accepted in their society than either the Hindu (45; 15.1%) or Muslim (35; 22.9%) subjects.

TABLE 2: QUESTIONNAIRE PART 2 - FAMILY HEALTH/ATTITUDES: N (%)

		Hindu	Muslim	Sikh	Total	p*
Number of respondents		298	153	171	622	
Member of family ever had health problems due to:						
eating too much?	**yes**	0	0	2 (1.2)	2 (0.3)	‡
smoking too much?	**yes**	0	0	0	0	‡
over working?	**yes**	2 (0.7)	0	1 (0.6)	3 (0.5)	‡
drinking alcohol?	**yes**	1 (0.3)	4 (2.6)	7 (4.1)	12 (1.9)	**0.005**
Ever been family arguments because of:						
work?	**yes**	3 (1.0)	4 (2.6)	3 (1.8)	10 (1.6)	0.385
gambling?	**yes**	0	1 (0.7)	0	1 (0.2)	‡
drinking?	**yes**	2 (0.7)	9 (5.9)	15 (8.8)	26 (4.2)	**<0.001**
Do you have any family members who drink alcohol at moment?						
	yes	7 (2.3)	15 (9.8)	52 (30.4)	74 (11.9)	**<0.001**
Do you think anyone in your family now or in past:						
eats too much?	**yes**	0	2 (1.3)	4 (2.3)	6 (1.0)	‡
smokes too much?	**yes**	0	2 (1.3)	3 (1.8)	5 (0.8)	‡
drinks too much?	**yes**	3 (1.0)	6 (3.9)	28 (16.6)	37 (6.0)	**<0.001**
drank too much?	**yes**	3 (1.0)	7 (4.6)	28 (16.6)	38 (6.1)	**<0.001**
Family member had trouble with police?						
	yes	0	0	0	0	‡
Has family member ever lost job or got into trouble at work due:						
illness?		0	1 (0.7)	1 (0.6)	2 (0.3)	0.271
drinking?		2 (0.7)	4 (2.6)	9 (5.3)	15 (2.4)	**0.005**
Does family member who drinks:						
drink alone?	**yes**	4 (57.1)	10 (66.7)	21 (40.4)	35 (47.3)	0.164
drink in the morning?	**yes**	4 (57.1)	2 (13.3)	8 (15.4)	14 (18.9)	**0.046**
try to cut down or stop?	**yes**	0	1 (6.7)	3 (5.8)	4 (5.4)	1.000
attend hospital for drinking?	**yes**	1 (14.3)	0	0	1 (1.4)	‡

* : Fisher exact test

‡: too few positive responses for analysis

TABLE 2: QUESTIONNAIRE PART 2 - FAMILY HEALTH/ATTITUDES: N (%) (CONTD.)

	Hindu	Muslim	Sikh	Total	p*
Number of respondents	298	153	171	622	
Does your religion allow drinking?					
yes	140 (47.0)	1 (0.7)	5 (2.9)	146 (23.5)	**<0.001**
no	37 (12.4)	150 (98.0)	142 (83.0)	329 (52.9)	
uncertain	121 (40.6)	2 (0.6)	24 (14.0)	147 (23.6)	
Is alcohol accepted in your family?					
yes	38 (12.8)	24 (15.7)	96 (56.1)	158 (25.4)	**<0.001**
no	259 (86.9)	116 (75.8)	37 (21.6)	412 (66.2)	
uncertain	1 (0.3)	13 (8.5)	38 (22.2)	52 (8.4)	
Is alcohol accepted in your society?					
yes	45 (15.1)	35 (22.9)	129 (75.4)	209 (33.6)	**<0.001**
no	219 (73.5)	101 (66.0)	10 (5.8)	330 (53.1)	
uncertain	34 (11.4)	17 (11.1)	32 (18.7)	83 (13.3)	

* : Fisher exact test

QUESTIONNAIRE PART 3 – PERSONAL HEALTH/ALCOHOL DRINKING/ ATTITUDES ETC (Table 3)

Cigarette smoking

Just over one-quarter of all respondents (178; 28.6%) were cigarette smokers; this proportion was similar across the three religious groups [Fisher exact test, p = 0.260]. The majority of these (69; 65.1%) preferred to smoke in company rather than alone; again, this was similar for all of the religious groups [Fisher exact test, p = 0.242].

Appetite

The vast majority of respondents in all of the religious groups (584; 93.9%) rated themselves as having an average appetite. Slightly more Sikhs (24; 3.9%) rated their appetite as poor compared with Hindus (7; 2.3%) and Muslims (6; 3.9%). These differences, while small and probably of no clinical relevance, were statistically significant [Fisher exact test; p = 0.045].

Watching television

Three-quarters of all respondents (466; 74.9%) watched television occasionally. Hindus and Sikhs tended to be more frequent television watchers than Muslims, and this difference was statistically significant [Fisher exact test, p = 0.004].

Any health problem due to eating or smoking too much

Just one subject (a Hindu) reported having health problems due to eating too much. None of the respondents reported health problems due to smoking too much.

Alcohol drinking

Among all subjects, a total of 64 respondents were alcohol drinkers. These consisted of 10 (3.4%) of all 298 Hindus, 21 (13.7%) of the 153 Muslim respondents, and 33 (19.3%) of the 171 Sikhs interviewed. These differences were statistically highly significant [Fisher exact test; p < 0.001].

Of those respondents who were not currently alcohol drinkers, 60 (20.8%) of the Hindus, 25 (18.9%) of the Muslims and 49 (35.5%) of the Sikhs reported that they had drunk alcohol in the past. The differences between the groups were again statistically highly significant [Fisher exact test, p = 0.002].

Age of starting drinking alcohol

The alcohol drinkers in the survey started (on average) at about 20 years of age, irrespective of their religious group [mean (s.d.) age 19.6 (4.7) years; one-way ANOVA p = 0.853]. This is markedly higher than in other parts of India (383). Most subjects reported starting alcohol drinking due to peer pressure, commonly at the colleges and the universities when they were studying. Some subjects reported starting alcohol drinking at their employment, at parties with colleagues. None of the subjects reported starting alcohol drinking at home or in relatives' and friends' homes.

Drinking habits

Most alcohol consumers drank weekly (39; 60.9%) or daily (11; 17.2%) – this included 8 (80.0%) of the Hindus, 16 (76.1%) of the Muslims and 26 (78.8%) of the Sikhs. Frequency of alcohol consumption was not related to religious grouping [Fisher exact test, p = 0.732].

Over 90% of Hindu and Sikh alcohol consumers preferred to drink in company, but this figure was less than three-quarters (71.4%) for Muslims who indicated a higher preference for drinking alone than the other two religious groups. This difference was statistically significant [Fisher exact test, p = 0.017].

Health problems due to drinking too much

Just one Hindu and one Muslim in the alcohol drinking cohort admitted to having any health problems due to drinking alcohol.

Level of alcohol consumption

The mean (s.d.) number of alcohol units consumed in the last week was 36 (14), and this was similar across the three religious groups [one-way ANOVA, p = 0.386].

The mean (s.d.) number of alcohol units consumed in the last month (if none had been consumed in the previous week) was 32 (12), and this was also similar across the three religious groups [one-way ANOVA, p = 0.913].

Frequency of drinking alcohol

Among all drinkers, the highest proportion of subjects who drank daily were in the Hindu group (30.0%), followed by Muslim subjects, and lastly people in the Sikh

group. Daily drinkers in the Hindu group were found to be drinking outside their own home, as were the Muslim subjects. Some of the Sikh group of subjects drank alcohol in their own homes.

Subjects who drank weekly included a smaller percentage of Hindus compared with the Muslim and Sikh groups. The highest percentage was found among the Sikhs, who often drank alcohol at their working places and after coming home. Muslim drinkers drank mostly with their close friends and without the knowledge of their families; this applies to the weekly Hindu drinkers as well.

Monthly drinkers were infrequent in all three religious groups. People who reported drinking occasionally mostly belonged to the Sikh groups, and they were mostly women.

Drinking preference

Drinking alcohol alone was reported mostly by the Muslim drinkers, which was expected mainly because of the religious restriction for alcohol drinking - they normally did not like it to be known that they drink alcohol. The Hindu group of drinkers did not report drinking alcohol by themselves. Only a small percentage (12.7%) of subjects in the Sikh group reported drinking alone either in their homes or outside drinking places.

Drinking alcohol in the company of others was found to be the most common practice in all three groups. Hindus reported drinking alcohol at different religious and other celebration, whereas Muslims never reported drinking in religious and other celebration and mostly drank with their friends, but not relatives. Subjects in the Sikh group also preferred drinking alcohol in company, usually friends or relatives, but not in religious places and ceremonies.

Only one Hindu drinker drank both alone and in company but that particular subject was not sure about his response.

Types of alcohol consumed

No differences were observed between the three religious groups with respect to the type of alcohol consumed. The most commonly reported preference was country liquor (44; 66.8%), followed by whisky (31; 48.4%), beer (26; 40.6%) and gin (23 (35.9%).

The word wine ("*daru", "modh")* refers to any type of alcoholic drink in India, so I had to ask specific questions to identify types of alcohol when respondents said they drank wine.

Beer: Drinking beer has become a more popular alcoholic drink and is produced widely now in India. Subjects who drink regularly often like to drink spirits as beer has to be consumed in a large quantity for the purpose of getting drunk, which is still often the purpose of drinking alcohol for most drinkers. Beer is also reasonably expensive by the Indian economical standard, and a pint can cost Indian 50 Rupees (about £0.70). Subjects from the working class (lower socio-economic class) did not report drinking beer at all.

Whisky: This is more popular among drinkers in the middle and upper classes, it is widely produced in India and a litre bottle costs the equivalent of £3 - £5 depending on the brand. Imported whisky is also widely available, especially in the cities and big towns, but it is more expensive (£30 upwards) and only very rich people can afford it. Most drinkers drank whisky in all three religious groups.

Gin: Subjects in all three religious groups reported drinking gin next to whisky. It is widely produced in India and a popular alcoholic drink. Imported gin is available and expensive, it was not found to be popular among the drinkers.

Brandy: This is available in India, both imported and home-made, but many drinkers did not report drinking brandy; it is normally only drunk by subjects belonging to the middle and upper classes.

Sherry: This is not widely available in Indian markets, and most subjects who drank alcohol did not even recognize the name of it.

Cider: Cider is not normally produced in India is and not a popular alcoholic drink; only one Sikh subject reported drinking it and this was imported from neighbouring country Bangladesh.

Rum: Rum is widely available but is not very popular; 12.1% of Sikh and 4.8% of Muslim subjects reported drinking it but none of the Hindu drinkers drank it.

Wine: It is now produced in India but the quality is not very good quality, it is not a very popular drink. As mentioned earlier the word wine *(modh/daru)* widely refers to any alcoholic drink in most parts of India.

Country liquors: These are normally illegally produced all over India, mostly in the rural areas by fermenting rice and some form of flower *(mahua),* and sold in villages, also in the cities and towns. It is very cheap and the alcohol content is very high, so

is a popular alcoholic drink of the working class people. Subjects in the Sikh group reported drinking country liquor more than the in other two religious groups – but the differences between the groups was not significant.

Preferred drinking places

Some interesting differences were found regarding the places of drinking between the three religious groups.

Public House: There are only a few public houses (pubs) in India, especially so in Eastern India at present, so no drinker was found to be drinking alcohol in public houses among all three religious groups.

Own home: Most alcohol consuming respondents expressed greatest preference for drinking in their own home (59; 92.2%). This preference was, however, significantly less pronounced for Hindus (70.0%) than for either Muslims (90.5%) or Sikhs (100%). [Fisher exact test, p = 0.007]. Drinking alcohol in the subjects' own home was common among Muslim drinkers because of the religious stigma attached to alcohol, so a level of secrecy was considered important. Subjects in the Hindu group drank at home for reasons related to the social restrictions of drinking alcohol. Subjects in the Sikh group drank at home as well as outside, mainly because of the acceptance of alcohol drinking in their society.

Friends' home: Most (56; 87.5%) expressed a preference for drinking in a friend's home. This preference was significantly less pronounced for Muslims (71.4%) than for either Hindus (90.0%) or Sikhs (97.0%). [Fisher exact test, p = 0.015].

Relatives' homes: Two-thirds indicated that they drank in a relative's home (43; 67.2%), but this also differed significantly across the religious groups, being reported by 81.8% of Sikhs, 60.0% of Hindus and 47.6% of Muslims [Fisher exact test, p = 0.028].

Restaurants: Less than half (26; 40.6%) drank alcohol in restaurants, irrespective of religious grouping [Fisher exact test, p = 0.164]. Drinking in restaurants was found mostly among the drinkers belonging to the upper classes. All working class and many middle class subjects could not afford to drink in the restaurants. To buy alcoholic drink at the restaurants is relatively expensive; also the price of food would be costly on top of it.

Social events: Over three-quarters (51; 79.7%) indicated that they drank at social events. This differed significantly across the religious groups, being reported by

90.9% of Sikhs, 90.0% of Hindus and 57.1% of Muslims [Fisher exact test, p = 0.012]. Drinking alcohol in social events including religious ceremonies is popular among Hindus; most Hindus drink in religious ceremonies, but not so much in social gatherings. Muslim subjects were never found to be drinking in the religious ceremonies due to the restriction imposed on them by their religious book *Koran.* Social events, again, are restricted to the upper class Muslims' gatherings. It also applies to the lower working class Muslims, only when they get together after a hard day's work and drink mostly country spirits.

Clubs: Few (9; 14.1%) drank alcohol in clubs; this figure was identical for all three religious groups [Fisher exact test, p = 0.885]. Drinking in clubs is generally not popular in this region. Clubs in Eastern India are very few and far between, and are only found in big cities like Kolkata, which is the capital of West Bengal.

Other places: Exactly three-quarters (48; 75.0%) indicated that they drank at other (unspecified) places. This proportion was also similar across the religious groups [Fisher exact test, p = 0.928]. Other places reported for the drinking of alcohol included drinking in the open air, in the fields and country side, which was found to be popular among people belonging to working lower class groups, in all seasons of the year, consuming mostly country spirits. Some students were found to be drinking away from known places, in the open air and countryside, mainly to hide their drinking habits from their family, colleagues and teachers.

In summary, the places used by drinkers to consume alcohol differed significantly between the three religious groups. Hindus and Sikhs drank openly in their own home, at friend's or relative's homes, and in most public places (with the exceptions of public houses and clubs). Muslims also drank openly in their own home, but were less likely than the other two religious groups to drink alcohol elsewhere.

Proper health facilities in area

Only two of the alcohol drinkers interviewed (1 Hindu and 1 Muslim) considered that there were proper health facilities in the area where they lived.

Consulted family doctor for drinking problems

Only 4 drinkers (1 Hindu, 2 Muslims and 1 Sikh) had consulted their family doctor for drinking problems. However, it was unclear from their responses whether this was due to a perception that proper health facilities were not available (see previous

paragraph) or due to the respondents considering that their alcohol consumption was acceptable and not affecting their health.

Money spent on alcohol

Half (32; 50.0%) of the drinkers claimed to spend equivalent of £4 or less on alcohol per week on average, and fractionally over one-quarter (18; 28.1%) regularly spent between £4 and £8. These proportions were similar across the religious groups [Fisher exact test, p = 0.259].

Half (29; 47.5%) of the drinkers had spent equivalent of £4 or less on alcohol in the previous week to their interview; less than one-fifth (11; 18.0%) had spent between £4 and £8. These proportions were also similar across the religious groups [Fisher exact test, p = 0.340].

Vegetarians

Approximately one-fifth of respondents were vegetarians. This was significantly more prevalent among Hindus (88; 29.5%) and Sikhs (28; 16.6%) than among Muslims (4; 2.6%). [Fisher exact test, p < 0.001].

Cinema habits

The vast majority of respondents watched either Asian films only or a mix of Asian and English films when they went to the cinema. Muslims and Sikhs were more likely to watch only Asian films than Hindus [Fisher exact test, p < 0.001].

Regular doctor health checks

Only approximately 1 in 7 of respondents (97; 15.6%) went to their doctor for regular health checks. This proportion did not differ significantly between the religious groups [Fisher exact test, p = 0.131].

Taking drugs for health problems

One in five of the subjects interviewed (126; 20.3%) were taking drugs for one or more health problems. Again, this did not differ significantly between the religious groups [Fisher exact test, p = 0.368].

Consulted doctor in last 6 months

One quarter of respondents (150; 24.1%) had consulted their doctor with a health problem in the preceding six months. This proportion was extremely similar across the three religious groups [Fisher exact test, p = 0.898].

Taking non-prescribed drugs

Only a small proportion (84; 13.5%) of subjects was taking non-prescribed drugs, of whom:

- 26 (31.0%) admitted to taking cannabis;
- 15 (17.9%) admitted to taking opiates;
- 67 (79.8%) admitted to taking "other drugs".

The proportion taking "other drugs" (mostly benzodiazepine group of drugs) differed significantly, this being more prevalent among Hindus than the other two religious groups [Fisher exact test, p < 0.001]. No other significant differences in drug use were observed.

General health habits perceptions

Few respondents in any of the religious groups considered that they ate or smoked too much. Similarly, very few felt that their alcohol consumption was excessive (either now or in the past).

Good facilities in area for social event

Just over one-third of those interviewed (213; 34.2%) considered that there were good facilities for social events in their area. Muslims were slightly more negative on this subject than Sikhs and Hindus [Fisher exact test, p = 0.010].

Cigarette and alcohol habits on waking

One in ten respondents (61; 9.8%) had a cigarette on waking; this was slightly less prevalent among Hindus [Fisher exact test, p = 0.059]. Only six subjects (1 Hindu, 4 Muslims and 1 Sikh) admitted to having an alcohol drink on waking.

Amount spent on entertainment

Two-thirds of respondents (400; 67.1%) spent £2 or less on entertainment per week – this was irrespective of their religious grouping [Fisher exact test, p = 0.263].

TABLE 3: QUESTIONNAIRE PART 3 – PERSONAL HEALTH/ALCOHOL DRINKING/ATTITUDES ETC: N (%)

	Hindu	Muslim	Sikh	Total	p*
Number of respondents	298	153	171	622	
Do you smoke cigarettes? Yes	94 (31.5)	42 (27.5)	42 (24.6)	178 (28.6)	0.260
If yes, preference: alone	11 (26.2)	13 (37.1)	13 (44.8)	37 (34.9)	0.242
in company	31 (73.8)	22 (62.9)	16 (55.2)	69 (65.1)	
(not recorded)	(52)	(7)	(13)	(72)	
How do you rate your appetite:					**0.045**
poor eater	7 (2.3)	6 (3.9)	11 (6.4)	24 (3.9)	
average eater	280 (94.0)	146 (95.4)	158 (92.4)	584 (93.9)	
more than average eater	11 (3.7)	1 (0.7)	2 (1.2)	14 (2.3)	
How often do you watch television:					**0.004**
rarely/never	30 (10.1)	35 (22.9)	18 (10.5)	83 (13.3)	
occasionally	228 (76.5)	105 (68.6)	133 (77.8)	466 (74.9)	
regularly	40 (13.4)	13 (8.5)	20 (11.7)	73 (11.7)	
Have you had health problems due to:					
eating too much? yes	1 (0.3)	0	0	1 (0.2)	‡
smoking too much? yes	0	0	0	0	‡
Do you drink alcohol? yes	10 (3.4)	21 (13.7)	33 (19.3)	64 (10.3)	**<0.001**
If you do not drink alcohol:					**0.002**
have you ever drunk alcohol? yes	60 (20.8)	25 (18.9)	49 (35.5)	134 (24.0)	
If you do drink alcohol:					
what age did you start? mean (sd)	19.6 (5.4)	20.0 (4.7)	19.3 (4.6)	19.6 (4.7)	**0.853**
how often? daily	3 (30.0)	4 (19.0)	4 (12.1)	11 (17.2)	0.732
weekly	5 (50.0)	12 (57.1)	22 (66.7)	39 (60.9)	
monthly	1 (10.0)	1 (4.8)	1 (3.0)	3 (4.7)	
occasionally	1 (10.0)	4 (19.0)	6 (18.2)	11 (17.2)	
preference: alone	0	6 (28.6)	2 (6.3)	8 (12.7)	**0.017**
in company	9 (90.0)	15 (71.4)	30 (93.8)	54 (85.7)	
alone + in company	1 (10.0)	0	0	1 (1.6)	

* : Fisher exact test

TABLE 3: QUESTIONNAIRE PART 3 – PERSONAL HEALTH/ALCOHOL DRINKING/ATTITUDES ETC: N (%) (CONTD.)

	Hindu	Muslim	Sikh	Total	p*
have you had health problems due to drinking too much?					
yes	1 (10.0)	1 (4.8)	0	2 (3.1)	‡
how many units have you drunk in last week?					
mean (sd)	41 (14)	37 (15)	33 (13)	36 (14)	0.386
if you have not drunk in last week, how many units have you drunk in last month?					
mean (sd)	35 (21)	33 (15)	30 (8)	32 (12)	0.913
Number who drink alcohol	10	21	33	64	---
Number of drinkers consuming:					
Beer	3 (30.0)	6 (28.6)	17 (51.5)	26 (40.6)	0.209
Sherry	0	0	0	0	‡
Whisky	5 (50.0)	7 (33.3)	19 (57.6)	31 (48.4)	0.196
Brandy	1 (10.0)	4 (19.0)	6 (18.2)	11 (17.2)	1.000
Gin	3 (30.0)	7 (33.3)	13 (39.4)	23 (35.9)	0.826
Cider	0	0	1 (3.0)	1 (1.6)	‡
Rum	0	1 (4.8)	4 (12.1)	5 (7.8)	‡
Wine	0	4 (19.0)	3 (9.1)	7 (10.9)	0.352
other (country liquor)	7 (70.0)	15 (71.4)	22 (66.7)	44 (68.8)	0.934
Number of drinkers who do so in:					
public house	0	0	0	0	‡
own home	7 (70.0)	19 (90.5)	33 (100)	59 (92.2)	**0.007**
friend's home	9 (90.0)	15 (71.4)	32 (97.0)	56 (87.5)	**0.015**
relative's home	6 (60.0)	10 (47.6)	27 (81.8)	43 (67.2)	**0.028**
Restaurants	5 (50.0)	5 (23.8)	16 (48.5)	26 (40.6)	0.164
social events	9 (90.0)	12 (57.1)	30 (90.9)	51 (79.7)	**0.012**
Clubs	2 (20.0)	3 (14.3)	4 (12.1)	9 (14.1)	0.885
other places	7 (70.0)	16 (76.2)	25 (75.8)	48 (75.0)	0.928
Proper health facilities in area	1 (10.0)	1 (4.8)	0	2 (3.1)	‡

* : Fisher exact test

TABLE 3: QUESTIONNAIRE PART 3 – PERSONAL HEALTH/ALCOHOL DRINKING/ATTITUDES ETC: N (%) (CONTD.)

	Hindu	Muslim	Sikh	Total	p*
Consulted family doctor for drinking problems					
yes	1 (10.0)	2 (9.5)	1 (3.0)	4 (6.3)	‡
How much money do you spend on alcohol per week on average?					
none	0	1 (4.8)	1 (3.0)	2 (3.1)	
up to £4	4 (40.0)	12 (57.1)	16 (48.5)	32 (50.0)	
£4 - £8	3 (30.0)	7 (33.3)	8 (24.2)	18 (28.1)	0.259²
£8 or more	3 (30.0)	1 (4.8)	3 (9.1)	7 (10.9)	
(not known)			(5)	(5)	
How much money have you spent on alcohol last week?					
None	0	5 (23.8)	5 (16.7)	10 (16.9)	
up to £4	4 (40.0)	9 (42.9)	16 (53.3)	29 (47.5)	
£4 - £8	5 (50.0)	2 (9.5)	4 (13.3)	11 (18.0)	0.340²
£8 or more	1 (10.0)	5 (23.8)	5 (16.7)	11 (18.0)	
(not known)			(3)	(3)	
Are you a vegetarian? yes	88 (29.5)	4 (2.6)	28 (16.6)	120 (19.4)	**<0.001**
At cinema, type of film watched:					
English	2 (0.7)	0	1 (0.6)	3 (0.5)	
Asian	109 (36.6)	91 (59.5)	112 (65.5)	312 (50.2)	**<0.001**
English or Asian	187 (62.8)	62 (40.5)	58 (33.9)	307 (49.4)	
Regular doctor health check: yes	54 (18.1)	24 (15.7)	19 (11.1)	97 (15.6)	0.131
Taking drugs for health prob? yes	63 (21.1)	25 (16.3)	38 (22.2)	126 (20.3)	0.368
Consulted doctor in last 6/12? yes	72 (24.2)	35 (22.9)	43 (25.1)	150 (24.1)	0.898
Take non-prescribed drugs? yes	41 (13.8)	16 (10.5)	27 (15.8)	84 (13.5)	0.365
If yes: cannabis	11 (26.8)	5 (31.3)	10 (37.0)	26 (31.0)	0.637
LSD	0	0	0	0	‡
amphetamines	0	0	0	0	‡
opiates	5 (12.2)	4 (25.0)	6 (22.2)	15 (17.9)	0.392
other	40 (97.6)	11 (68.8)	16 (59.3)	67 (79.8)	**<0.001**

* : Fisher exact test ²: Kruskal-Wallis test

TABLE 3: QUESTIONNAIRE PART 3 – PERSONAL HEALTH/ALCOHOL DRINKING/ATTITUDES ETC: N (%) (CONTD.)

		Hindu	Muslim	Sikh	Total	p*
Do you think that you?						
eat too much?	**yes**	2 (0.7)	1 (0.7)	3 (1.8)	6 (1.0)	‡
smoke too much? °	**yes**	0	1	0	1	‡
drink too much now? °°	**yes**	0	1	0	1	‡
drank too much in past? °°	**yes**	1 (10.0)	3 (14.3)	2 (6.1)	6 (9.4)	0.521
Do you have good facilities in your area for social events?						
no		119 (39.9)	40 (26.1)	54 (31.6)	213 (34.2)	**0.010**
When you wake in the morning, do you sometimes:						
have a cigarette?	**yes**	21 (7.0)	21 (13.7)	19 (11.1)	61 (9.8)	0.059
have a drink of alcohol?	**yes**	1 (0.3)	4 (2.6)	1 (0.6)	6 (1.0)	0.065
How much money do you spend on entertainment per week?						
none		60 (20.3)	40 (26.7)	37 (24.5)	137 (23.0)	0.263²
up to £2		157 (53.2)	45 (30.0)	61 (40.4)	263 (44.1)	
£2 or more		78 (26.4)	65 (43.3)	53 (35.1)	196 (32.9)	
(not known)		(3)	(3)	(20)	(26)	

* : Fisher exact test ²: Kruskal-Wallis test °: smokers only °°: alcohol drinkers only

BRIEF MICHIGAN ALCOHOLISM SCREENING TEST: B.M.A.S.T. (Table 4)

Irrespective of their religious grouping, most of the respondents who admitted to drinking alcohol, reported that they did not consider themselves to be normal drinkers (59: 92.2%) and/or that their friends/relatives did not consider them to be normal drinkers (56: 87.5%).

However, only a fraction over one quarter (17: 26.6%) of these same individuals responded positively to any of the B.M.A.S.T. items that indicated a possible alcohol problem. As a consequence, the median B.M.A.S.T. score was 0 (zero). The same zero median score was observed for the Muslim and Sikh sub-groups, but the Hindu sub-group recorded a median score of 4. These differences were statistically significant [Kruskal-Wallis test, $p = 0.004$].

Medians and ranges are appropriate summary statistics for the B.M.A.S.T. scores as they followed a very positively skewed distribution. However, the median is not a sensitive measure of sub-group differences when almost three-quarters of the responses are at one end of the data range (as in this case). Thus, although not theoretically recommended, mean vales were also computed both overall and for the three religious sub-groups separately to aid interpretation of the significant Kruskal-Wallis test. These indicated that the B.M.A.S.T. scores for the Sikh drinkers tended to be lower than those for both the Muslim and Hindu drinkers (but there was no difference between the latter two sub-groups).

TABLE 4: BRIEF MICHIGAN ALCOHOLISM SCREENING TEST (B.M.A.S.T.) : N (%)

	Hindu	Muslim	Sikh	Total	p*
Do you feel you are a normal drinker?					
no	8 (80.0)	19 (90.5)	32 (97.0)	59 (92.2)	0.173
Do friends / relatives think you are a normal drinker?					
no	7 (70.0)	18 (85.7)	31 (93.9)	56 (87.5)	0.091
Have you attended a meeting of AA?					
yes	0	3 (14.3)	1 (3.0)	4 (6.3)	0.276
Have you lost friends because of drinking?					
yes	1 (10.0)	1 (4.8)	1 (3.0)	3 (4.7)	0.734
Have you gotten into trouble at work through drinking?					
yes	3 (30.0)	5 (23.8)	1 (3.0)	9 (14.1)	**0.018**
Have you neglected obligations through drinking?					
yes	3 (30.0)	3 (14.3)	1 (3.0)	7 (10.9)	**0.039**
Have you ever had DTS after heavy drinking?					
yes	1 (10.0)	1 (4.8)	1 (3.0)	3 (4.7)	0.734
Have you ever gone to anyone for help over drinking?					
yes	1 (10.0)	2 (9.5)	1 (3.0)	4 (6.3)	0.471
Have you ever been in hospital because of drinking?					
yes	1 (10.0)	1 (4.8)	1 (3.0)	3 (4.7)	0.734
Have you ever been arrested for being drunk?					
yes	1 (10.0)	1 (4.8)	1 (3.0)	3 (4.7)	0.734
Total score **0**	4 (40.0)	13 (61.9)	30 (90.9)	47 (73.4)	
4	4 (40.0)	4 (19.0)	1 (3.0)	9 (14.1)	
8	0	1 (4.8)	1 (3.0)	2 (3.1)	
12	1 (10.0)	0	0	1 (1.6)	
25	0	1 (4.8)	0	1 (1.6)	
70	0	1 (4.8)	0	1 (1.6)	
78	1 (10.0)	0	0	1 (1.6)	
95	0	1 (4.8)	1 (3.0)	2 (3.1)	
mean (median)	10.6 (4)	10.2 (0)	3.2 (0)	6.7 (0)	**0.004°**

*: Fisher exact test °: Kruskal-Wallis test

TABLE 4a: DETAILS OF 6 RESPONDENTS SCORED AS "ALCOHOLIC" ON B.M.A.S.T.

Study number	**300**	**381**	**593**	**224**	**619**	**519**
Sex	Male	Male	Male	Male	Male	Male
Age (years)	28	43	53	34	43	69
Ethnic group	Bengali	Bengali	Bengali	Hindustani	Punjabi	Punjabi
Religion	Hindu	Muslim	Muslim	Hindu	Muslim	Sikh
Practicing religion	No	Yes	No	No	No	No
Occupation (Full-time or Part-time)	Full	Part	Part	Part	Full	Full
Social class	Upper	Lower	Upper	Lower	Middle	Upper
Marital status	Single	Married	Married	Married	Married	Married
Living in Extended family or With Spouse	E	E	WS	E	WS	WS
Family alcohol problems	No	No	No	No	No	No
Age (in years) started alcohol	20	15	20	14	22	20
How often drink alcohol	Weekly	Weekly	Daily	Daily	Daily	Daily
Units of alcohol last week	40	50	50	60	60	50
Prefer drinking Alone or in Company	C	C	A	A+C	A	A
BMAST responses						
Do you feel you are a normal drinker?	Yes	**No**	Yes	Yes	Yes	Yes
Do friends / relatives think you are a normal drinker?	Yes	**No**	Yes	Yes	Yes	Yes
Have you attended a meeting of AA?	No	**Yes**	**Yes**	No	**Yes**	**Yes**
Have you lost friends because of drinking?	No	No	No	**Yes**	**Yes**	**Yes**
Have you gotten into trouble at work through drinking?	No	No	**Yes**	**Yes**	**Yes**	No
Have you neglected obligations through drinking?	**Yes**	No	**Yes**	**Yes**	**Yes**	**Yes**
Have you ever had DTS after heavy drinking?	No	No	**Yes**	**Yes**	No	**Yes**
Have you ever gone to anyone for help over drinking?	No	No	**Yes**	**Yes**	**Yes**	**Yes**
Have you ever been in hospital because of drinking?	No	No	No	**Yes**	**Yes**	**Yes**
Have you ever been arrested for being drunk?	No	No	No	**Yes**	No	No
Total score	12	25	70	78	95	95

ANALYSIS OF COMPARISON OF DRINKERS AND NON-DRINKERS (Table 5)

Because very few respondents admitted to being alcohol drinkers, complex multivariate analyses to investigate the factors most associated with alcohol drinking in each of the three religious groups were not possible. Evaluation of potential precipitating factors for alcohol drinking was thus restricted to a relatively small number of factors considered to be important, each of which was evaluated separately as summarized in Table 5. All attempts to combine two or more factors into a multivariate evaluation led to unstable logistic regression models and non-interpretable results. Indeed, because of the small numbers of alcohol drinkers, even the analyses reported in Table 5 should be interpreted with great caution – for that reason, analyses in this section have been restricted to comparing drinkers and non-drinkers within the three religious groups.

Male and female drinkers

Unsurprisingly, all drinkers in the Hindu group were males; in the Eastern part of India drinking alcohol is still found to be very rare among the Hindus especially in the middle class group.

In the Muslim group most alcohol drinkers were males as well, although some female drinkers were found. The female drinkers in this group were all from the lower working class group which has traditionally been drinking alcohol in different forms throughout history.

Among the respondents in the Sikh group, most drinkers were males – but the proportion of female drinkers in this religious group was higher than in the other two religious groups. Generally, drinking of alcohol is more accepted and practised among the people of Sikh religion. The female drinkers were found to be mostly in the upper affluent and lower economic classes; very few drinkers were found among the middle class group.

Age of drinkers and non-drinkers

Among the Hindu group, the mean (s.d.) age of the drinkers was found to be 43.7 (17.5) compared to 41.9 (17.2) for non-drinkers. The mean age of drinkers in the Muslim group was 44.4 (9.9) and among non-drinkers was 42.3 (18.3). Among the

Sikh group of subjects, the mean age of drinkers was 42.6 (13.9) and among the non-drinkers mean age was found to be exactly same [42.6 (22.0)].

The age distributions of drinkers and non-drinkers were very similar in all three religious groups and there were no significant differences between the three religious groups.

Ethnic groups and drinking alcohol

In the Hindu group, 2.5% of Bengalis admitted to drinking alcohol, which was comparatively a very low percentage considering that 28.6% Hindustanis and 12.5% Punjabis were found to be drinking alcohol. These Hindustanis and Punjabis had been resident in the State of West Bengal for many years and spoke in the Bengali language but did not consider themselves as belonging to the Bengali ethnic group.

In the Muslim group of subjects, the largest percentage of drinkers were Hindustanis (14.9%), next were Bengalis (15.0%), followed by the Punjabis (14.3%). The subjects from the Pathan ethnic group admitted drinking less than the other groups (8.7%).

In the Sikh group of subjects, 25% of Bengali ethnic respondents drank alcohol, whereas 19.2% of respondents in the Punjabi ethnic group consumed alcoholic drinks. The four subjects (100%) in the Sikh group declared that they were of Bengali ethnicity and no longer Punjabis although they all originally came from the Punjab State of India.

Occupation and drinking alcohol

In the Hindu group, most drinkers had a full-time occupation, although a few subjects with a part-time occupation were also found to be drinking alcohol. Among the retired subjects, 5.1% admitted to drinking alcohol, compared to none of the students, unemployed, and housewives. The students and unemployed people mostly had no income so no means to buy alcohol, while most housewives expressed no interest at all in drinking alcohol.

Among the Muslim group, 20.5% subjects were full-time employed and drinking alcohol. Also, 40.7% of the part-time employed respondents were found to be drinking alcoholic beverages. One (2.3%) housewife admitted drinking alcohol and she was the wife of a very rich businessman. None of the students, retired or unemployed subject were found to be drinking alcohol.

In the group of Sikh subjects, the largest percentage of subjects (64.9%) who admitted drinking alcohol were in full-time employment. Among part-time employed subjects, 16.7% consumed alcoholic drinks. One retired subject (6.7%) was found to be an alcohol drinker, and he was a captain in the Indian army. Four housewives (7.1%) admitted drinking alcohol; two belonged to the high income upper class group, and the other two were from the low income lower class group.

It was apparent in all three religious groups that students and unemployed subjects were not alcohol consumers, which could be primarily due to financial reasons. Nearly all students in India have to pay for their studies and do not normally receive any grant from the Indian or State Government. Most unemployed subjects would be struggling just to survive, as there is no similar welfare system in India, as in the UK, for them to receive any benefit.

Social class and drinking alcohol

There are three unofficial but widely recognized socioeconomic classes in India, mainly based on income; so, for example, the poor, the unemployed and people employed in unskilled jobs are normally considered as belonging to the lower class. Most educated people and those are from middle income group are classed as middle class including civil servants, doctors, nurses etc. Upper class consists of rich people mostly in business and also those are from political background.

In the Hindu group, drinking alcohol was not found to be popular in the middle class. People who were educated (including teachers, clerks, doctors and nurses) were not found to be inclined to drink alcohol mainly due to the stigma attached to it, and for financial reasons. Drinkers were found to be more frequent in the lower socioeconomic class group (20.7%) consuming mostly country liquors and other cheap alcoholic drinks, while the upper class group (7.0%) tended to consume foreign made and locally made branded spirits.

In the Muslim group, drinking alcohol was most prevalent in the lower socio-economic class group (22.9%), next in the upper class group (10.3%), and lowest in the middle class group (8.1%), for the same reasons detailed for Hindus.

A similar picture was found among the alcohol drinkers in the Sikh group; 18 (22.0%) were from lower class group, 11 (17.5%) were from upper class, and the lowest number (15.4%) were from the middle class group.

Marital status and drinking alcohol

In the Hindu group, similar percentages of alcohol drinkers were found among both married (3.4%) and unmarried (3.3%) respondents. No drinkers were found among the groups of divorced, remarried, and widowed groups.

In the Muslim group, most drinkers were married only once or were single. One drinker was also found to have been married more than once.

In the Sikh group, most drinkers (27.3%) came from the married group, whereas 5.3% came from the group of single subjects.

Number of children

Alcohol drinkers tended to have more children on average than non-drinkers in all three religious groups, although this difference was statistically significant only in the Muslim group.

Residential unit

Alcohol drinkers, especially from lower socioeconomic class were more likely to be living in slum areas or in rented houses than other kinds of residential unit; this was similar across the religious groups. Superficially, this appears at odds with the finding that alcohol drinkers were more likely to be in full-time occupation – but may indicate that drinkers were more inclined to spend any disposable income on alcohol, rather than on improving their living conditions or other activities of hobbies and interest.

Living style and drinking alcohol

In the Hindu group who were living alone, nobody was found to be drinking alcohol; most people who were drinking alcohol were living with a spouse (5.2%) and in extended families (2.9%). As drinking alcohol is looked down upon, it may be difficult to consume alcoholic drink living in an extended family environment.

A similar picture was found in the Muslim subjects; most drinkers (43.5%) were found to be living with spouse only and much fewer subjects (8.5%) lived with extended families.

Among the Sikh subjects, 25.0% of respondents who drank alcohol lived alone. In line with other religious groups, most alcohol drinkers (48.8%) lived with a spouse. Very few respondents who drank alcohol (9.5%) were living in extended families.

It was apparent that the trend of drinking alcohol was found to be more popular with respondents of the three religious groups who lived with their spouses and not with extended families.

Educational status and drinking alcohol

Among all Hindu and Muslim subjects, those with basic or no education drank more alcohol whereas in the Sikh group it was subjects with higher education attainment who drank more. This could be due to the acceptance of drinking alcohol in this religious group

In the Hindu group, subjects were found to be drinking alcohol tended to have no formal education (23.1%) or had only primary school education (16.7%). Most of the respondents with no education or only primary school education belonged to the lower economic class who were used to drink country liquor or other cheap type of alcoholic drinks. Some subjects were found also to be drinking who had secondary school (3.4%) and University level of education (3.1%).

In the Muslim group, it was again respondents with no education (24.0%) or only primary school level education (22.2%) who admitted to drinking alcohol; these were predominantly from the lower economic working class group in which the consumption of alcohol is traditional.

In the Sikh group of subjects, the higher percentage of alcohol drinkers had a University level of education, followed by subjects belonging to groups who had no education or just basic education at primary school level. Acceptance of alcohol could be one of the reasons why subjects who drank alcohol tended to have a higher level of education.

Religious practice and drinking alcohol

Overall, alcohol drinking tended to be more common among non-practicing than practicing Hindu and Sikh respondents, whereas more practicing than non-practicing Muslim subjects admitted to drinking alcohol (which is contrary to their religious teaching against drinking alcohol).

In the group of Hindu subjects, only one subject (0.6%) was found to be practicing their religion while drinking alcohol. He was a priest (*Brahmin caste)* who admitted he had been drinking alcohol for many years and told me that there was nothing

wrong in consuming alcoholic drinks, as Hinduism always allowed *'sura'* (wine) drinking. Most drinkers in this religious group were non-practicing.

The findings were somewhat different for the Muslim respondents. In this group, 7.5% of respondents who were practicing their religion drank alcohol; in the non-practicing respondents, a much higher percentage (57.9%) drank alcohol.

Among the Sikh subjects, the finding was similar to the Hindu group; most people who admitted drinking alcohol were non-practicing (34.7%) while only 8.1% if the non-practicing group did so.

Despite these differences, it is reasonable to conclude that, in general terms, alcohol drinkers were much more likely to be found to be not actively practicing their religion.

TABLE 5 COMPARISON OF DRINKERS AND NON-DRINKERS BY RELIGIOUS GROUP

	Hindu			Muslim			Sikh		
	Non-drinkers	Drinkers	Odds ratio	Non-drinkers	Drinkers	Odds ratio	Non-drinkers	Drinkers	Odds ratio
Sex: male	151 (93.8)	10 (6.2)	1	61 (78.2)	17 (21.8)	***4.95 (1.58-15.5)***	54 (68.4)	25 (31.6)	***4.86 (2.04-11.***
female	137 (100)	0	not calculable	71 (94.7)	4 (5.3)	1	84 (91.3)	8 (8.7)	1
Age mean (s.d.)	41.9 (17.2)	43.7 (17.5)	1.01 (0.97-1.04)	42.3 (18.3)	44.4 (9.9)	1.01 (0.98-1.03)	42.6 (22.0)	42.6 (13.9)	1.00 (0.98-1.0
Ethnic group: Bengali	269 (97.5)	7 (2.5)	1	17 (85.0)	3 (15.0)	1	3 (75.0)	1 (25.0)	1
Punjabi	7 (87.5)	1 (12.5)	5.49 (0.59-50.8)	30 (85.7)	5 (14.3)	0.94 (0.20-4.45)	135 (80.8)	32 (19.2)	0.71 (0.07-7.0
Pathan				21 (91.3)	2 (8.7)	0.54 (0.08-3.61)			
Guzrati	5 (100)	0	not calculable			---			
Hindustani	5 (71.4)	2 (28.6)	***15.4 (2.5 – 93.3)***	53 (84.1)	10 (15.9)	1.07 (0.26-4.34)			
Tamil	2 (100)	0	not calculable			---			
Other				11 (100)	0	not calculable			
Religious practice: practising	160 (99.4)	1 (0.6)	1	124 (92.5)	10 (7.5)	1	91 (91.9)	8 (8.1)	**1**
non-practising	128 (93.4)	9 (6.6)	***11.3 (1.41-90.0)***	8 (42.1)	11 (57.9)	***17.1 (5.59-52.0)***	47 (65.3)	25 (34.7)	***6.05 (2.53-14.***
Occupation: full-time	52 (91.2)	5 (8.8)	1	35 (79.5)	9 (20.5)	1	13 (35.1)	24 (64.9)	1
part-time	63 (95.5)	3 (4.5)	0.50 (0.11-2.17)	16 (59.3)	11 (40.7)	2.67 (0.93-7.73)	20 (83.3)	4 (16.7)	***0.11 (0.03-0.3***
Student	42 (100)	0	not calculable	15 (100)	0	not calculable	35 (100)	0	not calculable
Unemployed	11 (100)	0	not calculable	9 (100)	0	not calculable	2 (100)	0	not calculable
Retired	37 (94.9)	2 (5.1)	0.56 (0.10-3.06)	13 (100)	0	not calculable	14 (93.3)	1 (6.7)	***0.04 (0.01-0.3***
Housewife	82 (100)	0	not calculable	43 (97.7)	1 (2.3)	***0.09 (0.01-0.75)***	52 (92.9)	4 (7.1)	***0.04 (0.01-0.1***

Other	1 (100)	0	Not calculable	1 (100)	0	Not calculable	1 (100)	0	

TABLE 5 COMPARISON OF DRINKERS AND NON-DRINKERS BY RELIGIOUS GROUP (CONTD.)

	Hindu			Muslim			Sikh		
	Non-drinkers	Drinkers	Odds ratio	Non-drinkers	Drinkers	Odds ratio	Non-drinkers	Drinkers	Odds ratio
Social class: lower class	23 (79.3)	6 (20.7)	1	37 (77.1)	11 (22.9)	1	64 (78)	18 (22)	1
middle class	225 (99.6)	1 (0.4)	0.02 (0.01-0.15)	34 (91.9)	3 (8.1)	0.30 (0.08-1.16)	22 (84.6)	4 (15.4)	0.65 (0.20-2.1
upper class	40 (93.0)	3 (7.0)	0.29 (0.07-1.26)	61 (89.7)	7 (10.3)	0.30 (0.08-1.16)	52 (82.5)	11 (17.5)	0.75 (0.33-1.7
Marital status: single	89 (96.7)	3 (3.3)	1	33 (97.1)	1 (2.9)	1	54 (94.7)	3 (5.3)	1
married once	196 (96.6)	7 (3.4)	1.06 (0.27-4.19)	93 (830)	19 (17)	6.74 (0.87-52.4)	80 (72.7)	30 (27.3)	**6.75 (1.96-23.**
married more than once	0	0	not calculable	5 (83.3)	1 (16.7)	6.60 (0.35-123.)	0	0	not calculable
divorced	0	0	not calculable	1 (100)	0	not calculable	0	0	not calculable
widowed	2 (100)	0	not calculable	0	0	not calculable	3 (100)	0	not calculable
Number of children mean (s.d.)	2.19 (2.23)	2.70 (2.36)	1.10 (0.84-1.45)	3.65 (3.32)	5.24 (2.61)	**1.16 (1.01-1.33)**	2.55 (2.70)	2.97 (1.78)	1.07 (0.92-1.2
Residential unit: owner	181 (98.4)	3 (1.6)	1	82 (91.1)	8 (8.9)	1	68 (87.2)	10 (12.8)	1
rented house	93 (93.9)	6 (6.1)	3.89 (0.95-15.9)	29 (76.3)	9 (23.7)	**3.18 (1.12-9.02)**	64 (74.4)	22 (25.6)	**2.34 (1.03-5.3**
flat	10 (100)	0	not calculable	0	0	not calculable	5 (100)	0	not calculable
slum	4 (80)	1 (20.0)	**15.1 (1.28-178.)**	21 (84)	4 (16)	1.95 (0.54-7.11)	1 (50)	1 (50)	6.80 (0.39-118
Living style: alone	1 (100)	0	not calculable	1 (100)	0	not calculable	3 (75)	1 (25)	3.17 (0.31-32.
with spouse	55 (94.8)	3 (5.2)	1.81 (0.45-7.22)	13 (56.5)	10 (43.5)	**8.25 (2.95-23.1)**	21 (51.2)	20 (48.8)	9.05 (3.85-21.
extended family	232 (97.1)	7 (2.9)	1	118 (91.5)	11 (8.5)	1	114 (90.5)	12 (9.5)	1

TABLE 5 COMPARISON OF DRINKERS AND NON-DRINKERS BY RELIGIOUS GROUP (CONTD.)

	Hindu			Muslim			Sikh		
	Non-drinkers	Drinkers	Odds ratio	Non-drinkers	Drinkers	Odds ratio	Non-drinkers	Drinkers	Odds ratio
Education: nil	10 (76.9)	3 (23.1)	1	19 (76)	6 (24)	1	13 (86.7)	2 (13.3)	1
primary school	10 (83.3)	2 (16.7)	0.67 (0.09-4.89)	14 (77.8)	4 (22.2)	0.91 (0.21-3.82)	19 (70.4)	8 (29.6)	2.74 (0.50-15.
secondary school	28 (96.6)	1 (3.4)	0.12 (0.01-1.28)	14 (87.5)	2 (12.5)	0.45 (0.08-2.59)	34 (75.6)	11 (24.4)	2.10 (0.41-10.
(Technical) college	102 (100)	0	not calculable	35 (92.1)	3 (7.9)	0.27 (0.06-1.21)	51 (94.4)	3 (5.6)	0.38 (0.06-2.5
university	123 (96.9)	4 (3.1)	**0.11 (0.02-0.55)**	45 (95.7)	2 (4.3)	**0.14 (0.03-0.76)**	20 (69)	9 (31)	2.93 (0.54-15.
postgraduate	15 (100)	0	not calculable	5 (55.6)	4 (44.4)	2.53 (0.51-12.6)	0	0	not calculabl
Family member no	7 (100)	0	1	12 (80)	3 (20)	1	40 (76.9)	12 (23.1)	1
drink alcohol? yes	281 (96.6)	10 (3.4)	not calculable	120 (87)	18 (13)	0.60 (0.15-2.32)	98 (82.4)	21 (17.6)	0.71 (0.32-1.5
Does your religion no*	156 (98.7)	2 (1.3)	1	132 (86.8)	20 (13.2)	1	134 (80.7)	32 (19.3)	
allow drinking? yes	132 (94.3)	8 (5.7)	4.73 (0.99-22.6)	0	1 (100)	not calculable	4 (80)	1 (20)	1.05 (0.11-9.6
Is alcohol accepted no*	258 (99.2)	2 (0.8)	1	119 (92.2)	10 (7.8)	1	72 (96)	3 (4)	1
in your family? yes	30 (78.9)	8 (21.2)	**34.4 (6.98-170.)**	13 (54.2)	11 (45.8)	**10.1 (3.59-28.2)**	66 (68.8)	30 (31.3)	**10.9 (3.18-37.**
Is alcohol accepted no*	251 (99.2)	2 (0.8)	1	109 (92.4)	9 (7.6)	1	42 (100)	0	1
in your society? yes	37 (82.2)	8 (17.8)	**27.1 (5.55-133.)**	23 (65.7)	12 (34.3)	**6.32 (2.39-16.7)**	96 (74.4)	33 (25.6)	not calculabl

*: no/uncertain

SUMMARY

For respondents in all three religious groups, perceived family and society attitudes towards alcohol were much more strongly associated with alcohol drinking than beliefs about how their religion regarded alcohol drinking. This was particularly so for the Hindu subjects, for whom the odds of their being a drinker were 34.4 and 27.1 if they believed that alcohol was accepted in their family or society respectively; the corresponding odds for believing that their religion accepted alcohol was only 4.73 (and only borderline significant statistically). However, it was observed also that subjects who did not practice their religion regularly were also significantly more likely to be alcohol drinkers than their practicing peers. These results suggest that religion does influence alcohol drinking behaviour when practiced, but otherwise it is secular (family and society) attitudes that may influence the decision by an individual to start drinking alcohol.

Gender also emerged as an important precipitating factor, with males significantly more likely to drink than females. This is probably a reflection that both religious and secular attitudes are generally more negative for women drinking alcohol than for men.

Significant associations were also identified with living arrangements. People owning their own homes were less likely to be alcohol drinkers, as were respondents living in an extended family. Finally, education was a potential associated factor, with University educated subjects being least likely to be alcohol drinkers.

CHAPTER 6
DISCUSSION

The survey reported in this dissertation is relatively small (both numerically and in terms of the geographical area covered) and has obvious limitations. Nevertheless, the survey findings provide an important insight not available from any other source into contemporary alcohol use in India in the Hindu, Muslim and Sikh religious groups that are traditionally associated with no or restricted alcohol consumption – and can, it is hoped, help to inform the development of political and clinical policies to deal with the future problems that will inevitably result from alcohol use in India.

It is important to note at the start of this discussion that no large-scale nationwide systematic epidemiological surveys have been conducted of alcohol use in India. A number of smaller studies have been completed in different regions, the results of which are mostly consistent and can be sorted into psychiatric surveys, general population drinking surveys and special population drinking surveys (247) – but importantly in the context of the objectives of this survey, there are no known published or unpublished surveys of alcohol use and related problems among different religious groups in India.

To the author's knowledge, this remains the only contemporary survey comparing the drinking patterns and pathologies of the three religious groups, in any part of India. As such, it is argued that, despite the limitations discussed below, this survey constitutes an important starting point both for health policies on alcohol use within India and for future research into this important problematic health area.

Before starting to discuss the findings of this survey, it may be useful to re-state the main survey aims:

- to study the prevalence of alcohol drinking and alcohol dependence among adults in the three religious groups Hindus, Muslims and Sikhs in the State of West Bengal in India;

- to establish whether there are any differences in drinking patterns within these three religious groups;
- to compare the alcohol drinking habits and alcohol dependence of the three religious groups;
- to compare the characteristic of alcohol drinkers and alcohol dependents in the three religious groups.

6.1 LIMITATIONS OF SURVEY

In order to put the survey findings into a proper context, it may be useful to first consider some of its limitations and the efforts made to overcome / minimise the effects of these.

6.1.1 CONDUCT OF SURVEY

Response bias

From the previous experience of both the author and others of surveys of alcohol drinking in India (16), it was obvious even at the design phase that asking questions directly about alcohol drinking might discourage people from participation in the survey. This issue was discussed with the General Practitioners and Community Leaders, all of whom agreed that the response would be poor if direct questioning was adopted regarding alcohol drinking. They also commented that it would be very difficult for Muslims to agree to comply with an interview regarding their alcohol drinking for a combination of social and religious reasons.

To minimise these problems, most subjects were interviewed at their homes (total 500 = 80.3%) after selecting their names at random from the Electoral Register; all were aged 18 years or over. Most of the subjects were contacted through their local General Practitioner, and were told that it was primarily a health survey although some questions on alcohol drinking were included.

There is a likelihood that some degree of response bias remained, as is always likely to be the case in research involving sensitive issues such as this. In particular, it is probable that, despite the trust gained, respondents may have tended to under-report alcohol consumption levels. Only a very small number reported intake levels

at or above alcohol dependency levels, for example, despite there being evidence of regular "binge drinking" in this community.

Overall, however, despite these reservations, the measures taken to reduce response bias are considered to have worked well. No potential participants refused to take part in the survey when invited to do so, and no evidence was seen during the conduct of the questionnaire interviews of any reluctance to answer the items relating to alcohol use, either by the respondent themselves or their family / friends. Equally, there was no impression gained by the interviewer that respondents were answering these items other than openly and honestly. The extent of any response bias in this survey is considered to be too low to have had any major impact on the generalisability of the survey findings.

Sampling bias

Sample selection process

Initially, a simple random sample of respondents was drawn from the population of the northern part of Greater Kolkata (old Calcutta). However, this produced a cohort of respondents with too few members of the Sikh religion for comparison with other religious groups. As the primary aim of the survey was not to just measure alcohol usage but also to *compare* the drinking behaviour of adults belonging to the three principal religious groups in the survey area, the initial sample was later augmented with a targeted stratified sample to provide sufficient respondents in all three religious groups for statistical comparison.

To complete the survey, the author visited the target population area once a year for three consecutive years. The first visit was to prepare the sample selection; the remaining two visits were to administer the survey questionnaire. For the main sample, a systematic sample of every third household was selected from the Electoral Registers covering the survey area. For the second (supplementary) sample one in three adults from the Sikh religious group were selected for the survey, as they could be clearly identified by their names.

The extended time scale over which the survey was carried out constitutes a potential confounding factor. However, while India has been changing rapidly both

economically and culturally over the past couple of decades, it is considered unlikely that the use of, and attitudes to, alcohol altered to different extents within the three religious groups, so no confounding occurred between time and religion.

The final survey cohort may thus be best described as a cross-sectional sample of the residents of Greater Kolkata stratified by religious group (with random samples selected from each stratum).

Geographical limitations

Due to the limited resources available, this survey could only be conducted in the State of West Bengal in the Eastern part of India. There are many variations in the drinking pattern in different parts of India and these have been documented earlier in this dissertation (208, 209, 211, 212, 214, 225, 227, 231, 236). Similarly, it is probable that there will be non-religious cultural factors affecting alcohol use to varying degrees in different parts of India, particularly as Westernising influences are observably greater in several of the main cities and towns in India compared to other (especially the more rural) areas of the country.

However, religion has a strong influence on the entire population of India, much more so than other cultural factors (this is discussed further below) – so it is considered reasonable to assume that, given the importance of religion still has to the vast majority of Indian people (almost all of whom claim to be adherents of the three main religions), the findings of this survey can be generalised, at least in terms of the extent to which claiming to have a particular religious faith has on an individual's alcohol use.

Furthermore, despite the considerable difficulties of selecting wholly representative samples in surveys of this nature and the practical difficulties encountered by the interviewer, it is felt that the final sample collected was adequately representative of the target population for the findings to be generalised to the region of Bengal – but it is acknowledged that some considerable caution may need to be exercised when trying to make more broad based generalisations of the survey findings.

Characteristics of respondents

The author observed when conducting the survey, as did the community leaders who made the initial contacts in most cases, that younger subjects were keener than their elders to participate in the survey and more willing give information spontaneously; older subjects (aged ≥50 years) were found to be more guarded in giving information on their drinking habits. This was not unexpected given the author's knowledge of this region, but was an important potential for bias in the survey findings.

However, when more reticent respondents were reminded that they were being interviewed by a medically qualified person actively working in the U.K. they became more approachable. The author is a practicing psychiatrist of many years standing in the UK, and he was confident that most (and possibly all) respondents eventually came to trust him and provided honest answers to the questionnaire items; indeed, some respondents requested advice on their health after the interview was over.

Measurement issues

The deficiencies of previous alcohol surveys in India include poor methodologies, non-representative sampling and non-rigorous methods of data collection. The design of the present survey attempted to avoid these problems through individual verbal administration of a structured and disguised questionnaire derived from various national and international sources, with targeted (stratified) sampling of the three religious groupings central to the survey objectives.

One noteworthy feature of this survey was the inclusion of questionnaire items on alcoholic beverage preference and frequency of consumption, rather than the exclusive concentration on quantity of alcohol consumed common in many surveys of this type. The respondents were asked to recount all the drinking they had done in the immediate preceding seven days (in case of those who had not had any drinks in the preceding seven days, they were asked to recount for preceding 30 days, failing which again preceding six months). As is well known, people can have a very 'questionable' (i.e. selective) memory and perception of their general quantity and frequency of alcohol use. However, by asking respondents to recount such use over a clearly defined period of time, it is argued that general reliability was achieved for the prevalence figures (384).

It is considered, therefore, that the structure of the questionnaire used helped to minimise issues relating to possible memory biases. In addition, a disguised questionnaire was used and the questions regarding alcohol drinking were presented late in the interview, by which time the author had usually established a close and good rapport with most participants, helping to increase the reliability of the responses obtained.

6.1.2 RELIGIOUS VS CULTURAL DIFFERENCES

Religion forms an integral part of the lives of Indian people, irrespective of which part of the country they come from. Indian people are mostly identified by their religious beliefs; it is almost impossible to find an atheist in India. People can be identified regarding which religious group they belong to just by their names. The importance of religion can be traced throughout history; it has had a core role in the cultural and social development of India, and has provided the context for many of the conflicts that have erupted between different population sub-groups over the centuries.

A survey examining all possible cultural factors potentially influencing contemporary attitudes to and the use of alcohol in this part of India was beyond the means of the author. However, given the enormous importance of religion to Indian people, it was felt that this single factor could stand as a meaningful and informative proxy measure for "culture" in its broader sense. The decision was thus taken to evaluate cultural influences indirectly by examining differences between religious groups.

The three main religious groups in India are the Hindus, Muslims and Sikhs. Other important religious groups are the Jains, Christians and Buddhists, but even if combined these comprise barely 5% of the whole population of India (385). It was felt that a comparison of current drinking patterns between the three main religious groups would be sufficient to identify the strongest (most important) factors influencing alcohol attitudes and use in this particular area of India.

6.2 OVERVIEW OF SURVEY FINDINGS

6.2.1 CONTEXT

Before discussing the findings of this survey in detail, it is worth re-visiting briefly the context within which it was conducted.

India is large, underdeveloped and mostly economically poor. It comprises just 2.4% of the world's land area but more than 16% of the world's population. It is extremely diverse in just about every sense: politically, socially and culturally.

After independence from British rule in 1947, a federal democracy was established in India with a Central Government in New Delhi - but with 25 State Governments. The country remains multi-ethnic and multi-lingual (with 18 official languages). Importantly within the context of this survey, it is also multi-religious with five major religions (83% of the national population is Hindu, 12% is Muslim, 2% are Sikhs, and the remainder are predominantly Christians and Buddhists) – but there is no official religion and citizens are free to practice their religion without any form of restriction.

Three-quarters of Indian people lives in rural areas but this population has decreased over time. Nearly half of the population are known to be illiterate and more than a third live below the poverty line, defined as being unable to afford the necessary food for survival. Overall India remains poor and there is a marked economic disparity, with a vast number of poor people and a few very wealthy ones. In between these extremes is a large, rapidly growing middle class, estimated to consist of more than 200 million people at present.

Beginning in the early 1990s, an economic structural readjustment programme was initiated which has led to a liberalisation of industrial licensing, privatisation of public industries and promotion of exports and imports (247). Although alcohol consumption has existed in India for many centuries, the quantity, patterns of use and resultant problems have undergone significant changes mostly over the past 30 years. These developments have raised concerns about the public health and social consequences of excessive drinking.

Reliable national data on alcohol use in India remain scarce. To date there have been few scientific studies; those that exist are predominantly post-independence and most were conducted after 1970, so establishing long-term trends in alcohol use is impossible. Even routine data collection on alcohol production and sales is difficult to obtain and collate (247). Significant regional, gender and social class differences also pose serious limitations on the extrapolation of findings based on small samples limited to only a few States within India.

In the absence of good epidemiological studies, most indicators of alcohol-related problems are based on newspaper articles and other reports on drinking. It is apparent from these that a distinct 'drinking culture' may not be on the social canvas of India - but the way in which social and economic forces are working may lead in the future to drinking patterns that are likely to cause more adverse health consequences. According to Room (386), India lies in the category of 'dry culture', based on per capita of consumption of alcohol; however, there is a tendency among those who drink to indulge in heavy drinking. It should be noted that India should be viewed as having a minority of current drinkers and among them, a majority of heavy drinkers. This has resulted in a relatively high prevalence of harmful use of alcohol causing alcohol-related health damage, violence and social disruption. Currently, approximately 15% to 20% of admission to psychiatric facilities are for alcohol related problems or symptoms of alcohol dependence (387).

Historical accounts in the Indian context suggest both traditional pleasures and pitfalls in alcohol intake and abuse. Knowledge of the art of fermentation, references to more than 48 alcoholic beverages in the post-Vedic period, themes and images of alcohol connected with rules and elites, and its selective use among lower classes are some of the indicators of gradual integration of alcohol consumption into Indian society. Religious censure and condemnation of alcohol by the abstaining upper castes (especially the *Brahmins*, who are mostly priests) as well as the portrayal of abstinence as a virtuous (even saintly) trait are a reflection of the collective wisdom of a people who are well aware of the perils of alcohol (388).

6.2.2 PREVALENCE OF ALCOHOL USE

This survey found a prevalence rate of current alcohol use of 10.2%. This is much lower than that reported in several epidemiological studies carried out in the last two decades in other parts of India (202, 205, 207 214, 239, 251). These consistently reported prevalence rates for current drinkers of 20% to 38% among males; among women, abstinence is still a cherished value and more than 90% were found to abstinent, a finding reflected in this survey also. In the West, this has been attributed to women being culture bearers or conversely because of greater licence for men particularly young men to drink in excess. The difference in alcohol use among genders has also been conceptualised as a function of social status, where drinking

had been prohibited for those who are socio-economically dependent or had subservient status such as women or children (384).

It has only been in the past few years that the government has allowed organised retail in the alcohol market in India. Consequently there has been an upsurge in the consumption of liquor and further large increases are expected (389). Liquor consumption among youth, especially among those staying in college hostels, in India has increased to 60%, according to a recent survey conducted by Associated Chambers of Commerce and Industry of India. Major cities and towns where respondents were interviewed were Chennai, Mumbai and Hyderabad, among others. The findings revealed that rural families spent 27% of their income on alcohol, while the urban population spent 38%. Tamil Nadu Marketing sales Corporation said that 80% of its revenue came from hard liquor and 20% from beer and the sale of spirit has gone up 60.3% in three years since 2005 (390).

Compared to the situation in Western countries, serious alcohol-related problems appear to be relatively rare in India (261). Previous studies on alcohol drinking in India found varying rates of "alcohol dependence", of 3.9% (252), 3% (253) and 1.3% (recorded by Elnagar (211) in his study on mental health in the West Bengal State of Eastern India); in this survey the B.M.A.S.T. (Brief Michigan Alcoholism Screening Test) identified just 6 subjects (2 Hindus, 3 Muslims and 1 Sikh) scoring 5 points or more (indicating a diagnosis of "alcoholic") among 622 respondents interviewed, representing less than 1% of the survey sample. While it may truly be the case that alcohol dependence is lower in the State of West Bengal than elsewhere in India, it is also possible that the B.M.A.S.T. is a more rigorous (conservative) test than those used in previous surveys.

Although these finding may be reassuring on the surface, it must be kept in the mind that it can take 10 to 20 years of periodic alcohol use for a person to develop "alcoholism" (247), so the results from all of these studies must be interpreted with great caution. Indirect data suggest that alcohol use in India has "sky-rocketed" since independence, so it is possible that a considerable percentage of those who are social drinkers currently will present as serious alcohol-related problems or alcoholism in the future (247). But even if this is not the case and alcohol abuse levels remain at the levels indicated above, these low prevalence levels still

represents a very considerable health burden on Indian society given the huge overall size of its population.

Irrespective of their religious grouping, most of the respondents who admitted to drinking alcohol reported that they did not consider themselves to be normal drinkers, most probably because the concept of normal or social drinking does not exist in India (388). This absence of a baseline against which to measure normal/abnormal alcohol consumption levels may make the development of policies to tackle alcohol-related health problems difficult.

There is now clearly an urgent need to augment the available data on prevalence of alcohol use across the whole of India. A more extensive national survey is needed based on representative samples collected within all 25 States. Indirect figures, although valuable and positive indicators, are not always adequate (384); reliable and accurate data is needed for the development of appropriate health and social programs to deal with the inevitable consequences of the increase in alcohol use evident within India.

6.2.3 MODES OF USE OF ALCOHOL

The link between religious ideology and alcohol use is a complex one; most studies have concentrated on Judaism (391) and have shown that, in general, Jewish culture acts as an inhibitor of drunkenness and alcoholism. Snyder (392) interpreted the break between the traditional Jewish society and the heavy alcohol use of some Jews in New York as being a result of the distance from traditional orthodoxy and ceremonial participation. However, most of the studies in this field have an ethno-historic character rather than an ethno-graphic one (393).

In this survey, subjects from the Hindu religious groups, unlike Muslim and Sikh group, admitted to drinking alcohol in public, including religious festivals and also in religious rituals of some sects like *Tantric* and *Shakti.* A ritualistic drinking pattern is found in many Hindu sects throughout the history. In the *Tantric* sect, drinking alcohol and all kinds of sensual indulgences are permitted and practiced during the religious rituals. The *Shakti* sect offers intoxicating drinks to propitiate their Goddesses and the devotees also consume alcohol (156). Alcohol is one of various mind-altering substances that allow a priest or devotee to attain altered level of

consciousness so as to be able to conduct magical spells. By contrast, due to religious restrictions, Muslims and Sikhs are not allowed to consume alcohol in their religious ceremonies and rituals.

Although the availability of licit alcoholic beverages has increased in India since independence, no normative pattern of drinking has yet emerged that could be said to be valid at the national level, or even within traditional rural and urban settings. There is nevertheless a visible change in the pattern of drinking as it has changed from ritualistic and occasional to a part of routine social and entertainment (247).

In general, unlike in Western countries, alcohol is rarely used in India for convivial purposes or taken in the evening before dinner. The basic purpose of drinking alcohol is to get drunk as quickly as possible and to stay drunk for as long as possible (388). In some States of India (Goa, Kerala, Karnataka, etc.) the legal system has loosened since the 1980s and public bars and pubs are appearing. Yet pub drinking, as it is understood in the West, has not yet been institutionalised (in the sociological sense), and information relating to this practice in India is only just beginning to evolve (388). Overall, this survey found a general pattern of alcohol use in the State of West Bengal similar to that found previously elsewhere in India.

A significant relationship was found between alcoholic beverage choice and socio-economic status; similar findings have been mentioned by earlier researchers (247, 384). Predictably, in this as in other surveys, subjects from lower socio-economic groups reported using cheaper beverages such as country liquor, illicit and homemade liquor compared to those from higher status; the use of country liquor was also much higher among the subjects living in rural and semi-rural areas.

The dangers inherent to the consumption of country and illicit liquors deserve particular attention. Country liquors are made from any cheap raw material available locally, such as sugarcane, rice or other grains. They are cheap as production costs are low. There are limited safeguards against adulteration with harmful intoxicants. Illicit liquors are produced by a number of small production units clandestinely. The raw materials are similar to those in country liquor, but since they evade legal quality control the alcohol concentration varies and adulteration is frequent. One dangerous adulteration is industrial methylated spirit, which constantly causes mass poisoning

of consumers who lose their lives or suffer damage to their health including irreversible eye damage. These liquors are cheaper than country liquor, and thus find a ready market among the poor lower socio-economic class. In this study drinking country/illicit liquors was found to be common among the poor working class of people and as a consequence exposing them to serious health risk. The absence of any apparent concerted effort on the part of the Indian authorities to eradicate these liquors is worrying and has considerable health implications for the country.

A greater proportion of students and younger people were found to be drinking beer which is again understandable in the sense that they would be experimenting at the beginning with a lighter beverage. **It may also be that beer drinking, especially in the urban areas, may not be looked upon by the people as such an indicator of alcohol use in general and may be resorted to more casually.**

According to Deccan Herald newspaper (394) the total consumption of "legitimate" alcoholic beverages in India is expected to touch 217.1 million cases in 2010, making a growth of 8% from the previous year. The Indian alcoholic beverages market is dominated by whisky, which accounts for more than half of the total spirits consumed. After whisky, rum is the most popular alcoholic beverage in India and the total consumption is estimated to be 42.4 million cases in 2010, a rise of 8.7% in a year (395).

Interestingly, as mentioned earlier, the word 'wine' (*'daru', 'modh'*) often refers to any type of alcoholic drink in India, so the author had to ask specific questions to identify types of alcohol when respondents said they drank wine.

6.2.4 SOCIO-ECONOMIC INFLUENCES ON ALCOHOL USE

Historically in India, alcohol use has been confined to two different population sub-groups, namely the highest and lowest socio-economic classes and the corresponding income groups (396). This and at least two previous surveys (247, 396) indicate that current alcohol use is greatest in these two socio-economic classes, with a tendency in the more affluent classes for increasing amounts of disposable income to be used for alcohol consumption.

India is growing in prosperity, but these changes are happening more quickly at the top than at the bottom of the socio-economic scale – so while the poor continue to struggle financially, the more well-off sections of the population are finding themselves with increasing levels of wealth – and are clearly channelling some of this new disposable income into social activities, including an increased consumption of alcohol.

It was quite apparent that in all three religious groups, the majority of students and unemployed subjects were not alcohol consumers, most probably due to financial reasons. Nearly all students in India have to pay for their studies funded by their families, and do not normally receive any funding from the Indian or State Government. Most unemployed subjects would be struggling just to survive, as there is no established welfare system in India for them to receive any benefit, and they cannot afford to purchase alcoholic beverages.

6.2.5 RELIGIOUS GROUPING INFLUENCES ON ALCOHOL USE

A smaller proportion of subjects in the Hindu group reported drinking alcohol than in the Muslim and Sikh groups. The Muslim subjects admitted to drinking alcohol more than the Hindu group. The highest number of drinkers was found in the Sikh group of subjects. This was expected for the reasons stated previously. It is interesting to note that Muslims admitted to drinking alcohol more than Hindu subjects though there is religious restriction for them regarding alcohol drinking, a finding that probably reflects differences in the extent to which external Westernising influences are affecting different religious groups.

Among all drinkers, the highest proportion of subjects who drank daily was in the Hindu group, followed by Muslim subjects, and lastly people in the Sikh group, whereas subjects who reported that they only drank weekly included a smaller percentage of Hindus compared with the Muslim and Sikh groups. People who reported drinking only occasionally mostly belonged to the Sikh groups, and they were mostly women.

There have been few studies in Muslim countries regarding drinking alcohol by Muslims. Badri (191) commented that the Islam religion prohibits alcohol drinking and many Arab-Muslim countries outlaw its use, sale or handling. Despite this ban,

however, alcohol can be obtained from "black-market sources" in the same way as illicit drugs. According to Kuwait psychiatric hospital records of 1985 admission for "alcoholism" and drug addiction rose by 50% between 1981 and 1982 and constituted "clinical alcoholism" and drug addiction from Muslim countries (397, 398, 399, 400, 401) which alerted governments of the region to the realities of alcohol-related problems even in populations where religious teachings forbid or severely limit the consumption of alcohol. The findings of this survey suggest strongly that similar trends are becoming evident in India.

Perhaps unsurprisingly, alcohol drinking was found to be more common in non-practising respondents from all three religions, though it is interesting to note that practising Muslim subjects admitted to drinking more (which seems a deviation from their religious teaching against drinking alcohol), of adding to the **growing body of evidence suggesting that religious restrictions regarding the drinking alcohol, especially among Muslims, has been weakening and practising Muslims are now admitting to drinking.** The majority of adherents to the Muslim religion normally practise their religious activities every day, whereas adherents to the Hindu and Sikh religions practise their religious activities mostly in special ceremonies (although most Hindu women, especially middle aged or older, practise their religion daily – and no Hindu woman admitted to drinking alcohol).

The overall picture was similar in all three religious groups; alcohol drinkers were much more likely to be found in the non-practising groups. In the group of Hindu subjects, only one was found to be practising religion and drinking alcohol; he was a priest *(Brahmin caste)* who admitted that he had been drinking alcohol for many years and stated that there was nothing wrong in consuming alcoholic drinks, as Hinduism always allowed *'sura'* (wine) drinking. In the Muslim group, a slightly higher (but still small) percentage (7.5%) of those who were practising their religion drank alcohol (7.5%); by contrast, over half (57.9%) of Muslins who reported themselves as not actively practising their religion drank alcohol. In the Sikh group, the finding was similar to Hindu group, with most people who admitted drinking alcohol being non-practising (34.7%).

6.2.6 INFLUENCE OF AGE ON ALCOHOL USE

Today in India, the tendency for alcohol consumption has percolated down to the youth. Most subjects in this survey reported starting alcohol drinking due to influences from within their peer group, commonly when studying at college or University. Some subjects reported starting alcohol drinking at their employment, in parties with colleagues. None of the subjects reported starting alcohol drinking at home or in the homes of either a relative or a friend.

The media has also played a leading role in encouraging use of alcohol among young people by such means as the portrayal of drinking in congenial social settings, by associating the habit with glamour and celebrity status, and by direct and indirect advertising.

Over the years, the age at which youngsters in India begin to consume liquor has come down. In 1986 the mean age was 19 years, by 1990 it had dropped to 17 years, and by late 1990s it was just 14 years (402). The mean age of starting to drink alcohol in this survey was around 20 years for all three religious groups. This difference may be due to respondents being reluctant to admit to the interviewer just how young they were when they started drinking, or it may be a reflection of less liberal attitudes in West Bengal State making it more difficult for young people to gain access to alcohol. Irrespective, both estimates are a cause of concern, as they suggest that in reality many people in India are starting to use alcohol at a very early age, so are at risk of developing into problem drinkers as adults.

Conversely, however, a large proportion of subjects aged over 40 years admitted drinking alcohol in the past but claimed that they were not current users; similar findings were found in the higher educational and occupational level sub-groups (it is possible, of course, that the influences of increasing age, higher educational attainment and increased occupational status are simply manifestations of a single effect). Several middle aged and older respondents in all three religious groups stated that after starting alcohol drinking they did not continue. This more positive finding suggests that (currently at least) alcohol consumption is an activity that many people in India indulge in when young but then revert to abstinent status with the onset of

adulthood (either due to maturity or the arrival of responsibilities linked to marriage/children).

6.2.7 PLACES USED FOR ALCOHOL CONSUMPTION

Sikhs most often drank alcohol at their working places and after coming home, while Muslim and Hindu drinkers did so mostly with their close friends and without the knowledge of their families. Daily drinkers in the Hindu and Muslim group were found to be predominantly drinking outside their own home, whereas most of the drinkers in the Sikh group of subjects consumed alcohol in their own homes.

Drinking alcohol alone was reported mostly by the Muslim drinkers, which was expected mainly because of the religious restriction for alcohol drinking – they normally did not like it to be known that they drink alcohol. The Hindu group of drinkers did not report drinking alcohol alone. Only a small percentage (12.7%) of subjects in the Sikh group reported drinking alone either in their homes or outside drinking places.

Drinking alcohol in the company of others was found to be the most common practice in all three groups. Hindus reported drinking alcohol at different religious and other celebrations, whereas Muslims never reported drinking in religious and other celebrations and mostly drank with their friends, but not relatives. Subjects in the Sikh group also preferred drinking alcohol in company, usually friends or relatives, but not in religious places and ceremonies. As mentioned earlier, only Hindu subjects admitted to drinking alcohol in the religious ceremonies including ritual drinking, especially among some sects of this religion.

It was found that drinking took place mostly at peoples' own home or their friends' homes except for the respondents in the Muslim group. The stereotype of drinking at liquor shops, clubs, and restaurants was thus not supported by this survey. Drinking at social gatherings such as marriages was also reported mostly by Hindu and Sikh subjects. Hindu subjects admitted to drinking at religious festivals, but this was not reported by the Muslim and Sikh respondents.

All three religious groups also reported drinking alcohol "in other places", particularly in the open air, in fields and in the countryside. This was most popular among respondents from lower/working class socio-economic groups, was indulged in during all seasons of the year, and mostly involved the consumption of country spirits. Some students who reported drinking in this manner indicated that they did so mainly to hide their drinking habits from their family, colleagues and teachers.

6.2.8 SOCIAL ATTITUDES TO ALCOHOL CONSUMPTION

Family acceptance

Family acceptance of alcohol drinking differed considerably between the three religious groups. Predictably, as there is no religious restriction on alcohol drinking in Hinduism, 80% of Hindu respondents indicated that their family accepted their consuming alcohol. In the Muslim group, 52% of drinkers indicated family acceptance of this activity whereas 48% remained uncertain; the Muslim religion strictly forbids any form of alcohol drinking but the drinkers appeared to have denied that religious doctrine, probably to justify their drinking habits. In the Sikh group, 90% of drinkers reported family acceptance of alcohol; although the Sikh religion restricts the drinking of alcohol, it is practised widely among all sections of society. The remaining 10% of Sikh drinkers responded as being uncertain about family acceptance, which could have been to justify their drinking habits.

Two Hindu respondents scored more than five points on the B.M.A.S.T. scale. The first of these had a relatively low educational attainment level, drank alcohol openly in front of family members and claimed family acceptance of their (excessive) drinking; the second, conversely, was more highly educated and knowledgeable, and reported being uncertain about how their family viewed their alcoholism.

All but one of the Muslim respondents who scored above five points on the B.M.A.S.T. scale reported an absence of family acceptance of their drinking and appeared to have feelings of guilt, regarding their drinking of alcohol as being against their religious belief and being in fear of being punished in *'behasth' (heaven and hell)* after death. The remaining Muslim in this category did not want to discuss this matter and appeared uncertain as to whether or not their family accepted their drinking.

In the Sikh group, both respondents who scored above five points on the B.M.A.S.T. scale responded affirmatively, indicating that, in their view, their family accepted their drinking alcohol heavily; both were from the low income working class group and drank openly with family members.

Social acceptance

Social acceptance of alcohol drinking differed less markedly between the religious groups. Among the Hindu group of drinkers, 80% responded affirmatively to this question - although there is no religious restriction to alcohol drinking in this religion, there is a strict social restriction of regular drinking - alcohol drinking is looked down upon still in Hindu society and people do not look favourably on alcohol drinkers except sometimes in religious ceremonies - it is probable that drinkers responded positively in order to justify their drinking habits. In the Muslim group about 75% of drinkers responded affirmatively to this question - in low income Muslim groups, drinking alcohol is widespread and socially accepted – individuals get together after a days' hard work and drink mostly home-made alcohol and country liquors - in upper class/high income Muslim group, individuals drink alcohol mostly in restaurants and hotels, an activity that is gradually becoming more socially acceptable.

Both high B.M.A.S.T. scorers in the Hindu group considered alcohol drinking to be socially acceptable, and mentioned the fact that in their society people openly drink alcohol and use drugs in festivals and ceremonies without censure. One high B.M.A.S.T. scorer in the Muslim group (a high income upper socio-economic class businessman) believed that alcohol drinking was socially acceptable, although his description of "society" appeared to be restricted to the company of fellow high income businessmen; by contrast, the remaining Muslims in this category reported that they drank alcohol secretively without the knowledge of other members of their society. Both high B.M.A.S.T. scorers in the Sikh group confirmed that traditionally in their religion drinking alcohol is social accepted.

Religious acceptance

The items on religious acceptance of alcohol drinking were handled in quite different ways within the three religious groups. Among the Hindu drinkers, 80% reported that their religion allows the drinking of alcohol; the remaining 20% were uncertain about this issue, and did not appear to have any detailed knowledge of their religious concept and teaching. Only one (4%) of the Muslim drinkers responded negatively to this question while the rest claimed to be uncertain about this issue, appearing unhappy to even respond to this question and refusing to discuss the matter any further. Similarly, in the Sikh group, only one drinker (3%) admitted to a restriction in the drinking of alcohol in their religion while, interestingly, the rest of the drinkers in this group remained uncertain.

One Hindu who scored highly on the B.M.A.S.T. scale expressed the view that alcohol consumption was acceptable within his religion; he was highly educated and had a good depth of knowledge of Hinduism. The Muslim and Sikh respondents who scored highly on the B.M.A.S.T. scale appeared aware that alcohol drinking was not acceptable within their religion and that they were drinking alcohol against their religious restriction; however, while all agreed that their religious teachings did not allow drinking of alcohol, they did not appear to be distressed or seriously concerned about the fact that they were consuming large amounts of alcohol.

6.2.9 GENDER AND ALCOHOL CONSUMPTION

Studies in other parts of India have consistently shown that females are less likely to consume alcohol than males (247). Mohan (236) found 58.3% of adult males to be alcohol drinkers compared to only 1.55% of adult females. Sundaram (403) found the prevalence of alcohol drinking was 36.1% for males and just 13.4% for females.

Similar trends were found in this survey. No female drinkers were found in the Hindu religious group even though alcohol drinking is allowed. Interestingly, female drinkers were found in the Muslim group of subjects which was unexpected due to the restriction on alcohol drinking in this religion.

6.2.10 MARITAL STATUS AND ALCOHOL CONSUMPTION

In the Hindu subjects, similar (small) percentages of alcohol drinkers were found in both the married (3.4%) and unmarried (3.3%) respondents; no drinkers were found

among the divorced, remarried and widowed respondents. In the Muslim subjects, most drinkers were in their first marriage or were single, although one drinker was found to have been married more than once. In the Sikh subjects, most drinkers (27.3%) were married, but a small sub-group (5.3%) were single.

6.2.11 EXTERNAL (WESTERN) INFLUENCES ON ALCOHOL CONSUMPTION

Since the end of British rule and the introduction of independence, India has witnessed a slow and steady rise of alcohol availability and consumption. The impact on this trend due to exposure of Indians to Western culture and influences cannot be under-estimated. **The recent changes in the type of alcoholic beverages consumed in India, in the patterns of alcohol drinking and in the widespread shift in societal attitudes towards drinking alcohol that are evident in this and previous surveys have clearly been hugely influenced by Western attitudes.**

The use of plant products such as cannabis and opium is decreasing, especially in those rural areas where major agricultural and industrial advances have taken place, to be replaced by an increased consumption of alcohol (257). The home brewing of alcohol remains a cottage industry, but distilled beverages with higher percentage alcohol content levels are gradually replacing traditional beverages. With the modernisation ("Westernisation") of India has come better fermentation and distillation processes; better packaging technologies have helped to make alcoholic beverages a mass produced commercial item; improved international and intra-country transport facilities have contributed to its easy availability. **The cumulative result of these developments has been a gradual increase of alcohol consumption since independence in 1947. Alcohol now occupies a definite place in many Indian social strata and is widely regarded as being associated with a "Western way of life" (404).**

6.3 INDIAN PERSPECTIVES IN RESPECT OF ALCOHOL STUDIES

The findings of the published surveys to date on alcohol use in India need to be treated with caution as most samples are relatively small, the studies have tended to be regional rather than nationwide, and the operation criteria of drinking alcohol used has differed considerably between surveys. However, there is general agreement

that 60% or more of the adult population of India is probably abstinent. This contrasts markedly with most developed countries, where complete abstinence rates tend to be much lower (247). A second common finding, including in this survey, is the striking gender difference, with fewer than 5% of women drinking alcohol compared with much higher rates in men.

No clear association of drinking with socio-economic categories are available in India, but indication from this and many other surveys suggest that drinking may be more prevalent among 'lower classes' and poorly educated people. "Alcohol dependence" may be present among 1% to 2% of the adult population in India (247).

It is probable that developing countries such as India may be experiencing more alcohol related problems than developed countries. The reasons for this may include a highly skewed distribution of drinkers in the society, the prevalence of nutritional and infectious diseases, economic deprivation, more hazardous and accident-prone physical environments and a generalised lack of any organized support system. Although conclusive scientific evidence for alcohol related health and social problems is lacking for India, there are enough indications in the available literature to infer that these are substantial. The rapid rise in alcohol consumption in recent years has increased the likelihood of further escalation of these problems in the years to come (247, 384). Ironically, India is one of the rare countries where prohibition has been incorporated into the National Constitution as one of the directive principles of State policy. Article 47 of the Constitution of India reads that *"the State shall endeavour to bring about prohibition of the consumption except for medicinal purposes of intoxicating drinks and of drugs which are injurious to health".* However, various national Governments that have been in power since independence in 1947 have followed the policy inconsistently. Alcoholic beverage production and sale is always controlled by the States independently and large amount of revenue is derived from this source. Recently, three States in India (Tamilnadu, Andhra Pradesh and Haryana) tried to implement total prohibition but unfortunately have already partially terminated this policy due to economic difficulties.

In recent years the Indian Government has relaxed rules concerning alcoholic beverages imports, along with those of local production of foreign brands under collaborative agreements. **This has provided an unprecedented opportunity for multinational alcohol producers to establish themselves in India. Not only is this likely to encourage and increase sales in India, but it will also give Western-style drinking patterns even more legitimacy and a more positive image than before. These policy decisions completely disregarded public health risk consideration (247). Foreign brands of alcoholic drinks can be easily purchased in most liquor shops of cities and towns, encouraging people of mainly middle and upper class to consume them as it has been reflected in the findings of my study**.

Although alcohol consumption has existed in India for many centuries, the quantity, patterns of use and relevant problems have undergone substantial changes over past 25 years and these developments have raised concerns about the public health and social consequences of excessive drinking. Alcohol-related data remain scarce in India, and so far there have been very few scientific studies, particularly in Eastern India. Significant regional, gender, social class and cultural differences also pose serious limitations on the exploitation of findings based on small samples (247). The survey presented in this dissertation provides the only evidence yet available on differences in alcohol drinking practices between different religious groups.

To be effective, alcohol policies for India need to be based on data and responsive to changes and trends in the society. Data can be contributed from many different sources, but periodic surveys of the general population would provide information that is hard to get any other way and could provide information on the extent of alcohol drinking that is not reported in official statistics. Surveys are also a primary means of obtaining information on the distribution of patterns of drinking and of abstaining in society, including the extent and social location of both sporadic and long-term heavy drinking. With questions included in such surveys about problems related to drinking, a population survey can contribute information not otherwise available on the impact of alcohol on family and social relations and other aspects of everyday life.

Analyses of the relation between drinking patterns and particular alcohol-related problems are potentially crucial information in designing prevention and intervention measures. For all these reasons more attention ought to be given to alcohol issues in future general population surveys oriented to public health and order in developing countries like India. The international guide for monitoring alcohol consumption and related harm by W.H.O. (2000) also recommends standardized methodologies to improve data collection and international comparability and can be helpful when planning surveys on alcohol consumption. A common practice in surveys in developing countries has been to use screening methods for alcoholism, such as M.A.S.T. (375), C.A.G.E. (357) etc. The M.A.S.T. screening method has been used successfully and validated in a study in Southern India and its standardised and validated short version (B.M.A.S.T.) was used successfully in this survey to detect alcohol dependence ('alcoholics'). **No nationwide systemic epidemiological surveys have been conducted in India on alcohol use and its harmful effect, but a number of smaller studies have been completed in different regions – while the results of these appear to quite consistent, definitive nationwide studies are urgently needed.**

6.4 MAJOR FINDINGS OF THIS SURVEY

A number of important findings emerged from this survey relating to the use within India of alcohol among the three religious groups studied. These have important implications for the health and well-being of the general population – and for the planning of delivery of health care services in the future. The most important of these are listed below.

6.4.1 OPENNESS ABOUT ALCOHOL CONSUMPTION AND RELATED HEALTH ISSUES

Proportionally more Muslim subjects, both males and females, were found to be practising their religion regularly than the subjects of other religious groups; they were also drinking less, especially subjects practising their religion regularly. Among Muslims, the group most frequently admitting to personal health problems due to drinking alcohol belonged to the lower working class group.

Conversely, and interestingly, comparatively more Muslim subjects reported alcohol drinking by family members. Overall, however, the highest percentage of respondents who confirmed health problems due to drinking by family members was in the Sikh group. This could be due to more social acceptance of drinking alcohol in this group compared with the other religious groups. The prevalence of family members having health problems due to drinking alcohol was lowest among Hindus, as alcohol drinking has not yet been socially accepted in this group, especially among the middle socio-economic classes. Muslim alcohol drinkers appeared to be at most risk due to their secretiveness about this activity and its related problems, not only to their friends and relatives, but also to their physicians, which is likely related to the fact that drinking alcohol is banned by their religion. As a consequence, they often turn to "*Hakims*" (non-qualified people using herbal and other forms of "alternative" medicine) for health advice/help, most probably risking their health further.

Tackling these variations across the three religious groups, needs to be an important element in the development of health services, with some appropriate targeting of Muslims possibly needed to ensure that a potentially latent problem is not missed or simply ignored.

6.4.2 USE OF ILLICIT ALCOHOL SOURCES

Lower working class subjects in all three religious groups reported drinking cheap home-made and illicit liquors or country liquor, thus exposing themselves to serious health risk. It is not uncommon to read in the Indian newspapers large numbers of people have died due to drinking toxic liquor (405, 406, 407, 408), including sometimes "methylated spirit" even though this is always labelled as being a poison with a picture of a skeleton on each bottle. This can pose very serious health risk including permanent eye damage leading to blindness. **Unfortunately, this group is predominantly very poor and cannot afford any treatment for alcohol related problems. However, any failure of the Indian Health Service to find ways of addressing this problem and provide affordable care could have major consequences for public health in this socio-economic group**.

6.4.3 ALCOHOL-RELATED HEALTH PROBLEMS AND AGE

According to one study, the age of initiation to alcohol drinking went down from 19 in 1986 to 14 in 2006; "... over the years, the age at which youngsters begin to consume liquor has come down in Kerala. In 1986 the age was 19, by 1990 it had dropped to 17, and by 1994 the age was 14" as commented by Arora (383, 402). The mean age of starting alcohol drinking reported in this survey was higher at 20 years. Irrespective of which figure is most accurate, this is clearly a matter of major concern, despite the fact that evidence also emerged that many people reduce or cease their alcohol consumption as they progress into middle-age.

This apparent desire of young respondents in all three religious groups to hide the fact that they are consuming alcohol, mostly without any knowledge of others, and hence putting themselves at increased risk of physical and mental harm, is particularly worrying – posing a further challenge to the Indian Health Services. Reliable and robust mechanisms for the early detection of alcohol-related issues among teenagers and young adults, independent of perceptions about their religious background and access to alcohol, is essential.

6.4.4 ALCOHOL CONSUMPTION LEVELS/BINGE DRINKING

Subjects who drank alcohol tended not to drink regularly and in moderation on each occasion, but rather to drink large amounts of alcohol intermittently i.e. to binge drink (406). Many people in India consider that the purpose of drinking alcohol is to achieve intoxication (get drunk), believing that spending money on alcohol would be meaningless unless the effect was felt of getting drunk (247). **This interesting phenomenon, mirroring trends among young adults in Western societies, has clear social as well as health implications for India, particularly if, as is likely, the trend towards this form of alcohol consumption continues.**

6.4.5 ALCOHOL-RELATED HEALTH PROBLEMS AND SOCIO-ECONOMIC STATUS

In all three religious groups, alcohol drinking was found to be more common among people belonging to the upper and lower socio-economic classes, and less so in the middle class group. This may be explained by response bias in that respondents from the middle class group had a better education and so were more aware of the harmful effects of drinking alcohol. However, alternative explanations must be

considered; for example the findings may reflect this group's inclination to use their limited amount of "disposable income" to meet family expenses and other commitments (such as education for their children, social commitments etc). Social restrictions on drinking alcohol may also prevent them from indulging in drinking alcohol. The middle class group mostly drank more expensive branded spirits and beer, possibly reflecting knowledge of possible harmful effects of less safe alternatives, and the implications of drinking illegally produced cheaper liquor.

Respondents from the upper socio-economic class group, who were mainly business people, were found to be more "Westernised". Alcohol drinking was found to be more socially accepted in this group; indeed, alcohol drinking is gaining respectability as a status symbol of westernisation. They were also able to afford to buy branded spirits and beer due to their better financial position. Perhaps surprisingly, the subjects in this group were not necessarily highly educated; in fact, most of them were found to have had only a basic education whilst at school and college. They were found to be drinking mostly at parties, in restaurants and bars, and sometimes at home. Social acceptance was reported mostly in the Hindu and Sikh groups, but much less in the Muslim group.

At the other end of the socio-economic spectrum in the lower working class group, alcohol consumption may be the only leisure activity for many. For a large number of poor people, alcohol may be primarily a means of coping with deprivation, poverty, and the painful realities of life (388). Drinkers in this group included both men and women, who were drinking mostly country liquor and illicit liquor, made usually from fermented rice and some variety of flowers (*'mahua'*). Country liquor is very cheap; a litre costs around Rs 40-50 (fifty pence approximately) for a litre bottle and can be readily purchased at liquor shops and markets in most towns and villages. Liquors made from fermented rice and flowers are normally home-made, illegally. Traditionally, this group of subjects drank alcohol during different ceremonies and often after a day's hard work. Drinking patterns were similar among the three religious groups and were at a level of high risk to their health and their society. Drinkers in this group were unable to afford fees for doctors and to purchase required medications; they also normally ate basic types of food (mostly rice and maize preparations), the nutritional value of which is limited. When considering the

best way of providing health services in this context, the interaction between factors such as nutrition and alcohol consumption levels will need to be considered carefully.

In low income countries, like India, the prevalence of alcohol and tobacco use is higher among the poor, which increases the risk of cardiovascular disease, cancer, liver disease and injuries among the poor, relative to the better off. There is also a strong association between use of alcohol and tobacco, and impoverishment through borrowing and distress selling of assets due to cost of hospitalization (383).

6.4.6 ALCOHOL DEPENDENCY LEVELS

Encouragingly, no evidence was found in this survey of high levels of alcohol dependency, although it is possible of course that anyone in this category would not have presented themselves for interview if they were aware of its subject matter. The responses from respondents who scored five or more points on B.M.A.S.T. ("alcoholics") were particularly interesting, but, because of the small numbers involved, should be interpreted cautiously. When asked if alcohol drinking was accepted in the family, just one (highly educated and knowledgeable) Hindu alcoholic responded negatively along with three of the Muslims.

However, it would be unwise to be complacent on this issue as clearly the consumption of alcohol is increasing and is likely to continue to do so. Vigilance on the part of those responsible for planning and providing health care is needed to ensure that harmful use of alcohol in individuals is detected as early as possible, and then treated appropriately and efficiently.

6.4.7 TRENDS IN ALCOHOL CONSUMPTION PATTERNS

On the whole, Eastern parts of India (including West Bengal State) have not as yet been largely Westernised as other regions of the country, but that is changing with rapid industrialisation and modernisation. Alcohol drinking will most probably increase and pro-active measures will have to be implemented to tackle alcohol related illnesses.

Between 10% and 20% of Indian people consume alcohol regularly, although the percentage differs from State to State. Over the last 20 years the number of drinkers has increased from one in 300 to one in 20; according to the Indian newspaper "The

Hindusthan Times", an estimated 5% of these drinkers can be classed as alcoholics or alcohol dependent. This translates into an astronomical number of alcoholics among the whole population of India (over a billion at present). It is clear that enormous planning and programming will be required by all States of India to tackle this huge problem (402).

Article 47 of the Indian Constitution, one of the Directive Principles of the State Policy is: *"The State shall regard the rising level of nutrition and the standard of living of its people and the improvement of public health as among the primary duties and, in particular, the State shall endeavour to bring about prohibition of the consumption except for medicinal purpose of intoxicating drinks and drugs, which are injurious to health".* Alcohol abuse has become a major cause of concern for India and an intense awareness programme needs to be carried out to spread the message effectively. The number of alcohol users in India is on the rise and the number of people requiring help is already large – and getting larger. Alcohol addiction no longer remains an urban phenomenon - rural areas are also widely affected by it.

6.4.8 SOCIAL ISSUES RELATED TO ALCOHOL USE

Alcoholism levels

The Alcoholic Anonymous review, "The Alcohol Atlas of India", shows that the production of alcohol in India doubled from 887.2 million litres in 1992/3 to 1,654 million litres in 1999/2000, and trebled to around 2300 million litres in 2007/8. Currently, alcoholism is a much bigger problem in the U.S.A. than in India – but India's alcohol manufacturing and consumption is expected to treble again in the next few years, which will lead to India overtaking U.S.A.'s alcoholic figure(at present 10-15% of its population). India's exposure to alcohol consumption is lower in India than the USA because of the ingrained social, cultural and religious values, but this situation is fast changing (406, 407).

Domestic violence

A study conducted by the National Institute of Mental Health & Neurosciences, Bangalore, and sponsored by the W.H.O., shows that 20% of women reported domestic violence and 94.5% of women identified their husband's alcohol consumption as a risk factor in incidents of domestic violence. It is not just the

alcohol drinkers themselves who are likely to contribute in the future to India's health and social problems, but problems are likely to be encountered among the family and dependents of alcohol drinkers, something policy makers in the Indian Government need to be aware of and heed.

Drinking and driving

India had an estimated 100,000 road fatalities in 2005 and 110,000 in 2006 according to Cohen (409). Of the total of 400,000 road accidents recorded in 2005, between 30% and 40% of night time incidents were linked with alcohol drinking. For various reasons, however, the majority of India's road traffic accidents are neither recorded nor analysed by cause; this position is unsustainable and needs to be altered.

Hazardous drinking

With more than half of alcohol drinkers in India falling into the criteria of hazardous drinking, alcohol is causing a major health problem in this country Prasad (410). India's reputation as a country with a culture of abstinence especially in matters regarding alcohol is under threat at present. The country, which has seen a rapid proliferation of city bars and nightclubs in recent years, is fast selecting alcohol as a lifestyle choice.

Though by world standards Indian are not heavy drinkers, the market is sizeable and growing fast. Mark Cohen, Marketing Director of the International Distillers (India), a unit of Grand Metropolitan plc of Britain, estimates that Indians consume about 60 million cases of liquor a year worth about $1.6 billion in sales. Whisky accounts for more than 60%, with brandy and rum making up another 30% (411).

6.5 CURRENT ACTIONS WITHIN INDIA TO TACKLE ALCOHOL-RELATED HEALTH ISSUES

India has at this moment in time an unprecedented opportunity to combat harmful drinking. As the country strives to meet global demand for low cost manufacturing and services, there is keen interest in enhancing human resource development, which can accelerate if politicians, employees, and community leaders reach consensus on key strategies to curb alcohol abuse. This could be done by, for example, implementing random breath tests, promoting community based

rehabilitation and encouraging local doctors to intervene at an early stage. The initial steps taken in Bangalore, Madurai, Mysore and some other States in India indicate that such strategies can save lives (409, 412).

The advertisement of alcoholic beverages is prohibited by law but dishonest manufacturers use surrogate advertisements to promote alcoholic products; these need to be banned urgently by the State and Central Governments. Union Minister of Social Justice and Empowerment Meira Kumar commented that to counter the growing demand of alcohol in India, the central government will consider restricting surrogate advertisements on television and other forms of media including print and outdoor places. The minister has expressed serious concern over the consumption of alcohol becoming a fashion statement in the country these days and said that alcohol is a gateway drug and it gradually leads users to consuming hard drugs. Kumar said that today, in India, the tendency of alcohol consumption has percolated down to youth and stressed that all efforts should be made to delay the initiation of alcohol use among adolescent youth. Kumar mentioned a meeting with national de-addiction and rehabilitation consultative committee to be arranged. She said that alcoholism is not confined to a particular class of society here. It has wider acceptance especially in urban areas while rural folks are not very far from it and often the increasing trend of alcohol consumption is due to peer pressure and social status (413).

At present, efforts to counteract alcohol-related problems are limited. The Ministry of Social Justice and Empowerment is active in this field. It already co-operates actively with media and youth organisations, and has developed collaborations with the Ministry of Health and Family Welfare and with Non-Government Organisations to tackle this problem; in partnership with the United Nations International Drug Control Programme (U.N.D.C.P.) and the International Labour Organisation (I.L.O.), it has launched three major initiatives for alcohol and drug demand reduction. Non-governmental efforts have been led by the Indian Health Organisation (I.H.O.), Health Related Information Dissemination among Youth (H.R.I.D.A.Y.), and the S.H.A.N.: Student Health Action Network (402).

Indian Alcohol Policy Alliance (I.A.P.A.) is a non-government organisation, established and registered under the Indian Trust Act in 2004; to prevent alcohol

related harm through evidence based policy intervention, advocacy and capacity building. I.A.P.A. is affiliated to the Global Alcohol Policy Alliance (G.A.P.A.) and is supported by F.O.R.U.T. – campaign for development and solidarity. The Alcohol Atlas of India, the first of its kind, published by the Indian Alcohol Policy Alliance (I.A.P.A.) was released in New Delhi on 29 April 2008. As a part of I.A.P.A., a National Consultative Meeting on Drinking and Driving was organised on 21 April 2006 in New Delhi to discuss the strategies and recommendations on prevention of drinking and diving in India. About 70 delegates attended, representing various stakeholders, including Police, Ministry of Transport, Directorate of Prohibition, W.H.O., World Bank, Indian Medical Association, Bar Council etc. A meeting of national Core Group on Alcohol Policy decided to make a submission to the Central Government of India highlighting the 'Imperative Need for a Central Law to prevent the Public Health Harm and Social Consequences caused by Alcohol Use'.

The Health Workers and Service Providers always experience great difficulty in managing alcohol related crisis due to lack of training resources and technical skills. It is in this context that Alcohol and Drug Information Centre (A.D.I.C.) and W.H.O. India Office have taken initiation to develop a Training Manual and a Handbook for Health Workers for alcohol and drug related problems (414).

"Alcoholics Anonymous" (406, 407) has been in India for 50 years - but branches have opened only in large Indian cities such as New Delhi, Mumbai and Kolkata. They are very few and far between, and most people are unaware of their existence. The Community Alcohol Team concept is still not known in most places in India. In the West Bengal State, facilities for the treatment of alcohol related problems, both physical and psychosocial, mostly do not exist. People with serious alcohol-related physical problems are normally admitted to hospital and nursing homes when they can afford to pay the cost. **People in the low socio-economic groups often suffer and subsequently may die without any treatment, which they mostly cannot afford. Family doctors only offer ad hoc treatment to people who can afford the cost of medication and consultation (415).** There are some educational programmes on television and in newspapers but there is a dearth of statistics on alcohol drinking and alcohol dependence in many States of India.

Hazardous drinking, which is marked by five or more drinks in a single session, has also been identified as a risk factor in the H.I.V. – A.I.D.S. epidemic, as it tends to encourage casual sex. For poor families, those risks are magnified and alcohol related mortality is often the highest among the poorest members of a society, and thus contributes to a widening survival gap between the rich and poor. Continued educational efforts are needed to further heighten knowledge and awareness among the people of India about these vital health issues (416).

6.6 FUTURE ACTION NEEDED WITHIN INDIA TO TACKLE ALCOHOL-RELATED HEALTH ISSUES

There have been many publications, both from within India and abroad, in recent times warning about the alarming rise in alcohol related problems throughout all States in India, which have been discussed earlier. The following could be considered as being important steps in the tackling of alcohol related problems of India in the 21st century.

- **Prohibition:** This has a long history in India since independence in 1947, initiated by Mahatma Gandhi, the Father of our Nation, who wanted to implement total abstinence. Prohibition legislation varies across States and includes; (a) the complete prohibition of the production and consumption of alcohol; (b) a partial prohibition where just some types of liquor (usually illicit and country liquor) are prohibited; (c) dry days where consumption is prohibited for certain days of the week or month. It is interesting to note that the State of Gujarat, the birthplace of Mahatma Gandhi, is the only State to have had complete prohibition since independence. Unfortunately, by the mid-1960s several States started lifting prohibition and in 1970s and 1980s total prohibition did not exist except in Gujarat State. It appears that the prohibition legislation may not be the answer to alcohol abuse.
- **Price control:** has been tried unsuccessfully in different States of India, but has been found difficult to implement and also due to the revenue generated in alcohol sale to the public, many States may not implement control of price.

- **A sensible approach:** planning to cope with the problem could be built on the successful model of anti-smoking campaigns based on education, persuasion and creating a positive social environment.
- **Primary preventative strategies:** to reduce overall consumption of alcohol in the population should include; (a) a strict enforcement of the laws on drinking and driving; (b) the provision of peer education on drinking behaviour in colleges, schools and universities; (c) strict enforcement of law on people exhibiting violent behaviour being drunk causing negative impact on society; (d) involving family doctors regarding preventative measures planning.
- **Secondary prevention:** should be directed at reducing the effects of problem drinking and post problem identification in individuals. Counsellors should work with other organisations, such as Alcoholics Anonymous and the Indian Psychiatric Association, in a united campaign to help individuals and families affected by problem drinking.
- **Alcohol related road traffic accidents:** in 2005, India had an estimated 100,000 alcohol related road fatalities, which is expected to rise every year, according to Mr. Rahul Baluja, President of the Institute of Road Traffic Education in New Delhi. Of the 400,000 road traffic accidents recorded in 2007, between 30% and 40% of night-time crashes were linked with alcohol, says Mr G. Gururaj, Head of the W.H.O. Collaborating Centre for Southeast Asia on Injury Prevention. Unfortunately, for various reasons, the majority of road traffic accidents are neither recorded nor analysed by cause (409). Nevertheless, r**andom breath testing** if implemented throughout the country would have a positive effect towards tackling alcohol related road traffic accidents. To date most Indian police in cities, towns and rural communities have no access to breathalysers, mainly because they are imported and expensive. However, in 2005 in Mysore, a southern city of one million people, a police campaign ("Wheel Watch") was launched against drunken driving incorporating a wide ranging initiative to increase public awareness and a plan to spread the campaign to other parts of India.
- **Reaching out to doctors:** Alcoholism treatment units should be opened in hospitals in both urban and rural areas. Primary health centres mostly in rural and

also in urban areas, too, should have facilities created for the detection and treatment of alcohol related problems.

- **Taking action at the village level:** Most people live in the millions of villages scattered throughout India. Since the 1970s, a variety of women's groups and religious sects have staged sporadic uprisings aimed at shutting down liquor shops and illicit brewing operations, but with very limited effect. Mr. M. Jeeva, Director of the Society for Integral Rural Development (S.I.R.D.) commented that "*Unless men are educated, and confronted, nothing is going to change*".
- **Human resource development programmes** throughout India can accelerate if politicians, employers and community leaders reach key strategies to curb alcohol use and abuse, including random breath tests, promoting community based treatment, management and rehabilitation, and encourage local doctors to intervene at an early stage (417).

6.7 CONCLUDING COMMENTS

Alcohol has been used in India for a long time, but the amount consumed and problem associated have increased in recent years. Distilled alcoholic beverages are the ones drunk more frequently but illicit alcohol is widely available and may amount to half the quantity of legal alcoholic beverages. **The recent economic liberalization policy has allowed multinational liquor brands entry into Indian market, which may further increase the quantity of alcohol consumed.**

Although most of the population is abstinent, available evidence points to high level of drinking alcohol with associated increasing risk of health (both physical and psychological) and social problems among those who drink. These have already created serious public health problems and they also impede the development of poorer regions of the country. Policy responses to date from the Federal and State Governments have been inadequate and inconsistent, resulting in the unopposed promotion of alcohol in most of the country, while a few States tried partial or complete prohibition, mostly unsuccessfully. Prevention and treatment programmes and facilities are wholly insufficient to meet India's needs. **It is anticipated that alcohol use and related problem will grow among all religious groups in India in the future. Unless properly planned policy changes are designed and**

vigorously implemented these problems are likely to produce an excessive burden on this developing country's resources.

It is perhaps appropriate to leave the last word to an Indian politician. Indian Health Minister Mr. A. Ramadoss commented in a meeting on 29 July 2008 reminding the delegates about the 58th World Health Assembly's warning on the harmful use and effects of drinking and said " Drinking is among the foremost underlying causes of diseases, domestic violence against women and children, disability, social problems and premature deaths'. He also said, 'The age of initiation of alcohol has come down from 19 years in 1986 to 13.5 years in 2006. In India alone, there are 62.5 million alcohol users and their numbers are increasing rapidly. It is documented that more than 50% of all drinkers in India come under the criterion of hazardous drinking". To denounce drinking and create awareness of its ill effects, the minister proposed to observe World No Alcohol Day on October 2, the birth anniversary of Mahatma Gandhi voicing the sentiments of one sixth of humanity living in the world's largest democracy India (418). **This needs to be seen in India as just the start of a concerted and targeted effort to introduce appropriate social and health policies in India to tackle the problems related to alcohol use that are inevitable over the coming decades.**

CHAPTER 7
CONCLUSIONS

India is a vast country with a population of over one billion people, with many different customs, languages, cultures and religions, even the traditional types of clothing are different. In recent times, it has been going through a period of rapid social change. The demographic profile of the country is in gradual transition, with increasing urbanisation and fast-growing cities and towns in every State. While the size of the upper and middle classes has grown in both urban and rural areas, certain subgroups of the population such as illiterate and unskilled workers, landless people in the villages and some of the slum dwellers in urban areas have remained poor and even become poorer. At the same time, the disposable income of the middle and upper classes has been growing steadily. India at present is witnessing major changes in its economic policies, with liberalization of the market with a steady introduction of market economy (228).

An integral element of this change has been its increased exposure to outside cultural influences, particularly from "the West" (mostly N. Europe and the U.S.A.). Most importantly in the context of this dissertation, there has been a steady "Westernising" of attitudes to, and the use of, alcohol. There is a growing body of evidence to suggest that the use of alcohol, with the consequent health and social problems associated with its harmful use, has been steadily on the rise all over India during the past three decades (261).

India is now one of the largest producers of alcohol in the world and production has been increasing rapidly over the last 15 years. More than two-thirds of the total alcohol beverage consumption in South-East Asia is in India. There has been a steady increase in production, which almost doubled from 887.2 million litres in 1992-1993 to 1,654 million litres in 1999-2000 – and was expected to treble to 2,300 million litres by 2007-2008. An official study by the Government of India in 2008 concluded that "*In India alone, there are 62.5 million alcohol users and their numbers are increasing rapidly*". It has been documented that more than 50% of all drinkers in India come under the criterion for hazardous drinking" (406).

The consumption of alcohol in India varies and the States of Punjab, Andhra Pradesh, Goa and north-eastern States have a much higher consumption than elsewhere in the country. Significantly higher use of alcohol has been recorded among tribal and lower socio-economic urban sections. A substantial portion of family income is spent on alcohol, more so in rural households, which also tend to be poor and marginalised (417).

The rapid rate of social and cultural development is reflected in various kinds of changes such as the break-up of the traditional nuclear family system and changes in values and attitude, including attitudes towards the consumption of alcohol. The cultural and religious controls that prevented people from drinking alcohol are weakening (417).

In view of the enormity of the situation it was felt that a community survey of alcohol drinking and related problems would be appropriate and essential, especially in the State of West Bengal in the Eastern part of India, where only two known community surveys recorded, one on mental health (211) which included alcohol drinking, the other one recently on implication of alcohol drinking of male adults at a slum in Kolkata (419) , whereas in other States of India there have been several surveys in the last 30 years or more.

SURVEY IMPLICATIONS

Despite the changing nature of the environment and the difficulties encountered in both design and delivery, the study has substantially achieved its aims. Within the sample, I have established the prevalence of alcohol drinking and dependency, and been able to describe the nature of alcohol consumption and characterise related social and demographic variables within and between the major religious groups in India.

The findings of this survey now need to be replicated in the same and other Districts of the West Bengal State, as well as across the whole of India, using much larger samples to obtain much more precise estimates of the pattern of use and abuse of alcohol drinking and related problems. As has already been stated, it is difficult to draw any conclusive inference from the findings of the epidemiological survey of a relatively small sample used in this study – although equally it is claimed that the

findings of this survey do provide an important initial insight into the problems facing Indian society due to changing attitudes to, and the consumption of, alcohol.

It is self-evident that unless suitable data are available, the problems associated with increasing alcohol consumption levels will remain taboo and hidden in many strata of society. **This base line research will not only provide public health authorities with evidence of high risk populations but has the ability to form the nature and extent of a future social and health policy**.

To initiate the study again the methodology may have to be modified, as has been indicated earlier (see "Methods"). Survey samples will need to be selected randomly within appropriately selected social strata to minimise issues of bias and to allow for a more detailed statistical analysis of the interaction between alcohol and other important social factors. **To date, most surveys of alcohol drinking in India have used incorrect or inefficient methodologies (247)**.

It will also be important to include other research workers from other disciplines involved with epidemiological studies on alcohol drinking and its harmful use at a national and also international level.

The value of the findings of this study will be applicable to the clinical practice as mentioned in the earlier paragraphs. The role of health workers dealing with alcohol-related issues and especially general practitioners will be of paramount importance. This will be particularly applicable in the villages which constitute the majority of the population of India (236) including West Bengal State. Health care facilities in the villages are mostly inadequate though health centre concepts have been developing at the State Government level since 1960s and most villages have health centres equipped with medically qualified doctors and trained nurses as well as health workers. A proper health care plan could be made according to the needs, both physical and psychological, as well as social, relevant to alcohol use and abuse. Similarly planned facilities could be implemented in towns and cities. As mentioned earlier, Alcoholics Anonymous centres could be spread to the villages and towns, as at present they only exist in a handful of big cities. The Kolkata Metropolitan area population has now increased to over 15 million and the area covered is more than 1854 km^2, and consists of approximately 78% Hindus, 20% Muslims and Christians, Buddhists and Sikhs constitutes 2% as mentioned earlier. **So, any planning for**

alcohol services will be a huge task and requires appropriate funding at the Government level as private funding is normally virtually non-existent.

There has been keen interest in India for last three decades or more to enhance human resource developments in all States and such developments can accelerate if politicians, employers and community leaders reach consensus on key strategies to curb alcohol abuse – by implementing measures including random breath tests, promoting community-based rehabilitation and encouraging local doctors to intervene at an early stage. Since the 1970s, operating at the village level , a variety of women's groups and different religious sects have staged sporadic uprisings aimed at shutting down liquor shops and illicit brewing operations, with little or no effect towards achieving their objectives. Alcohol policies ought to include mainly measures for:

1. Work and other performances affected by alcohol consumption
2. Family and society as a whole affected by alcohol consumption
3. Link between alcohol and poverty
4. Link between alcohol and violence
5. Link between alcohol consumption and road traffic accidents
6. Economic and social cost of alcohol consumption
7. Physical and mental health issues caused by alcohol consumption
8. Regular research programmes using correct methodology

This study hopefully will encourage further studies in the West Bengal State to establish overall drinking patterns and pathologies of all religious groups so that properly planned multidisciplinary alcohol services can be established throughout the region. Appropriate training needs for workers of all disciplines could be identified from further research project findings and alcohol policies including future planning, as mentioned earlier, could be monitored, reviewed and modified based on the findings of these research projects.

APPENDICES

SANSKRIT TERMS USED IN THIS THESIS EXPLAINED

Rig Veda

The Rig Veda is the oldest Veda and it is a collection of 1028 hymns sung in praise of gods and goddesses

Sam Veda

The Sam Veda is a valuable source of information for the study of the history of Indian music. It contains 1810 hymns to be sung by a special class of priests at the soma sacrifice.

Yajur Veda

The Yajur Veda contains 1549 hymns to be sung at the time of sacrifices and yajanas.

Atharva Veda

The Atharva Veda contains 731 hymns to be sung to ward off spells and charms.

Dharma Sutra

Was written in 600 B.C. it contains the collection of religious beliefs and traditions of the Aryans.

Kalpa

There are 6 Vedangas comprehensive studies of Vedic law and ritual of all these, Kalpa is regarded to be the most important, including three groups of sutras.

Hsuan Tsang

Was a Chinese pilgrim. He visited India during the reign of Harshavardana and travelled for 18 years through the length and breadth of India (626 A.D. – 644 A.D.). His book Si-Yu-Ki has been the most helpful source for the reconstruction of historical geography of India.

Charaka

A great Physician during the reign of Kaniska and Charaka – Samhita, a book on medicine was written by him.

Sushruta

A great name in Indian medicine during the Gupta times. Sushruta – Samhita a book on medicine was written by him.

Kahatriyas

The four varnas or groups in Aryan society were Brahmanas, Kahatriyas, Vaishyas and Sudras. Rulers, Officials and soldiers were called the Kahatriyas and considered to be protectors of the community.

Amir Khusrau

The least known Persian writer of the sultanate age. He was born in 1252 at Patiali in Uttar Pradesh. He was the poet Laureate in the court of the Khiljis and the Tughlags. He was popularly known as Tuti-i-Hind or the parrot of India. Besides poetry, he wrote prose and music. He also invented the musical instrument called Sitar. He was a follower of the Sufi tradition of Chisti. Khusrau died in 1325. His riddles, which are popular even today, have enriched the Hindi and Urdu languages.

Akbar Namah

Was written by Abul Fazl, a great scholar in Akbar's court. It describes the life of Akbar. Fazl's work Ain-i-akbari gives a detailed description of legal and revenue system in Akbar's administration.

Katahasaritsagar

Was the oldest and the greatest collection of tales in the world. It was written in Sanskrit by Somadeva, a Kashmiri Brahmin. N.M. Penger says "...Somadeva has presented us tales which were destined to inspire the genius of unborn giants of European Literature – Beccaccio, Goethe, Chaucer and Shakespeare. We must hail him as the father of fiction and his work as one of the master pieces of the world".

Soma

The various natural phenomena were personified and worshipped as God. Soma was one of them. Soma was described as God of Rig Veda and he was the God of the Sacred Plant of that name.

Kautilya's Arthashastra

Arthashastra was written by Kautilya (Chanakya) who was the minister and mentor of Chandragupta Muaurya. The book is an invaluable guide providing information about the

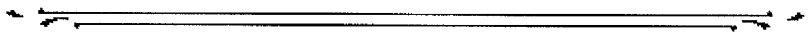
economy, administration and society of the day. It deals with the art of Government in the widest sense of the term.

Matshyapurana

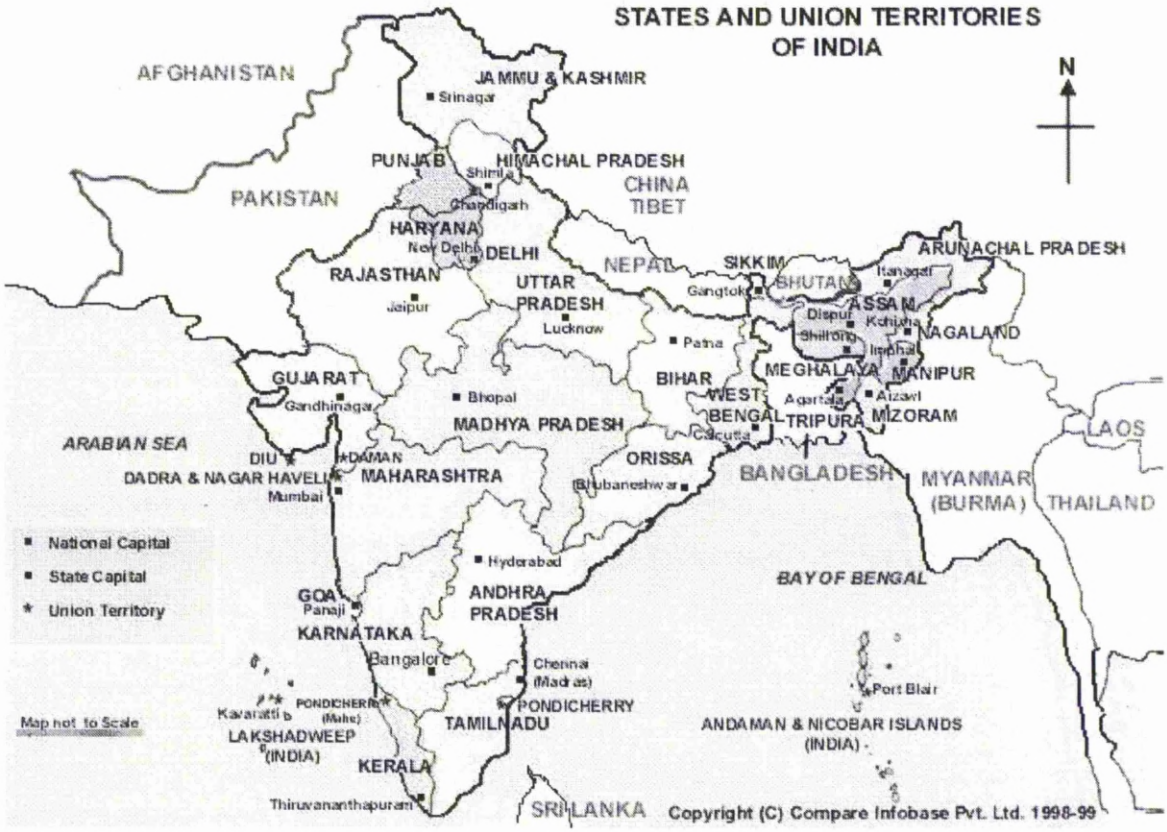
Puranas are the religious books of the Aryans. Matshyapurana is one of the eighteen Puranas. Lord Vishnu took different forms and Matshya (fish) was the different avatar (incarnation) of Lord Vishnu.

Panini's Ashtadhyayi

Is the most scientific grammar of the Sanskrit language. It provides roots of the words and the context in which they are used in Vedic literature.



MAP OF INDIA


STATES AND UNION TERRITORIES
OF INDIA
N
AFGHANISTAN
JAMMU & KASHMIR
Srinagar
PUNJAB
HIMACHAL PRADESH
Shimla
Chandigarh
PAKISTAN
CHINA
TIBET
HARYANA
New Delhi
DELHI
NEPAL
SIKKIM
Gangtok
BHUTAN
ARUNACHAL PRADESH
Itanagar
RAJASTHAN
Jaipur
UTTAR
PRADESH
Lucknow
ASSAM
Dispur
Shillong
Kohima
NAGALAND
Patna
Imphal
MEGHALAYA
MANIPUR
GUJARAT
Gandhinagar
Bhopal
BIHAR
WEST
BENGAL
Agartala
Aizawl
TRIPURA
MIZORAM
MADHYA PRADESH
Calcutta
LAOS
ARABIAN SEA
DIU
DAMAN
DADRA & NAGAR HAVELI
MAHARASHTRA
Mumbai
ORISSA
Bhubaneshwar
BANGLADESH
MYANMAR
(BURMA)
THAILAND
National Capital
State Capital
Union Territory
Hyderabad
BAY OF BENGAL
GOA
Panaji
ANDHRA
PRADESH
KARNATAKA
Bangalore
Chennai
(Madras)
Port Blair
Kavaratti
PONDICHERRY
(Mahe)
PONDICHERRY
Map not to Scale
TAMILNADU
ANDAMAN & NICOBAR ISLANDS
(INDIA)
LAKSHADWEEP
(INDIA)
KERALA
Thiruvananthapuram
SRI LANKA
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